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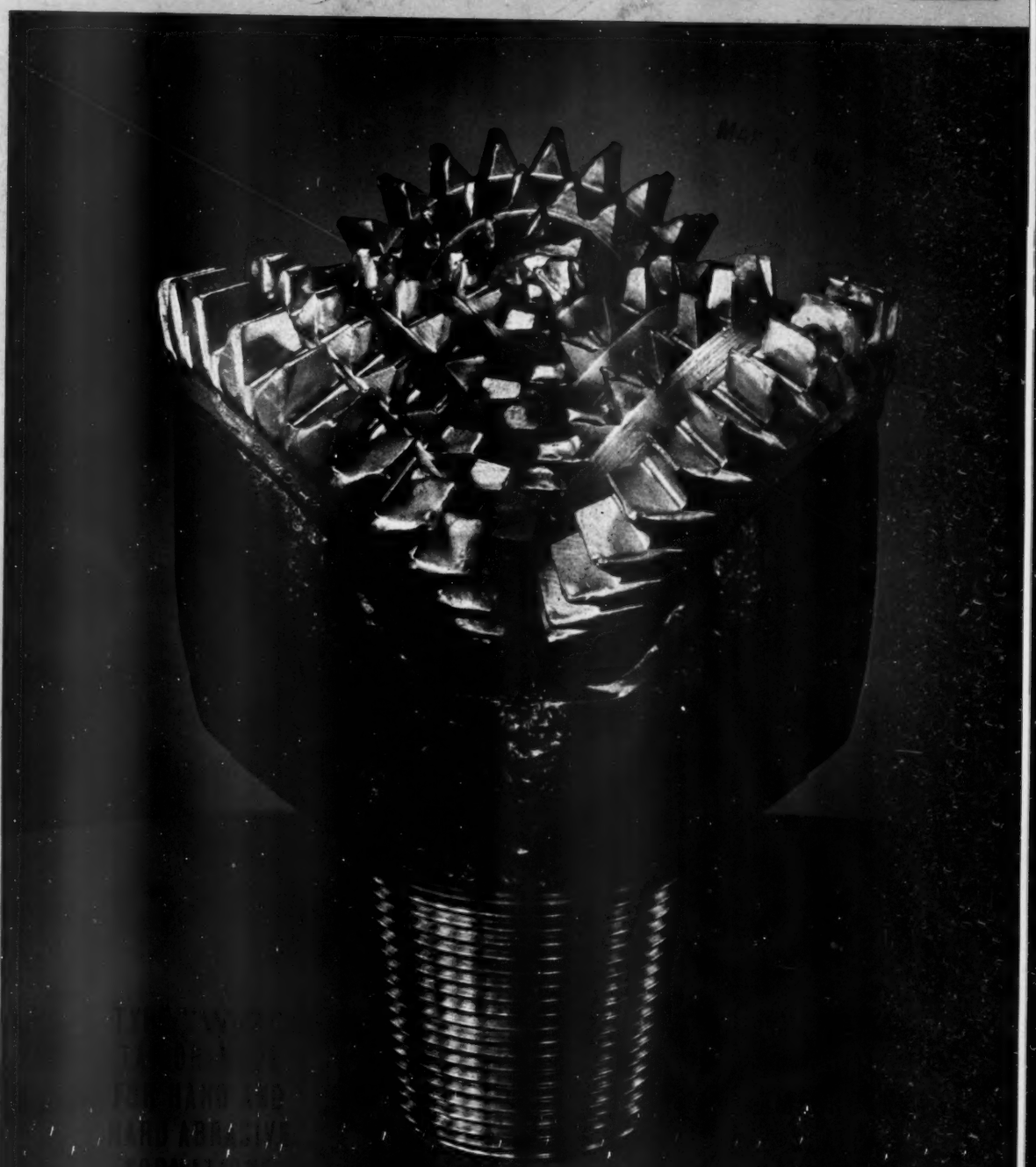

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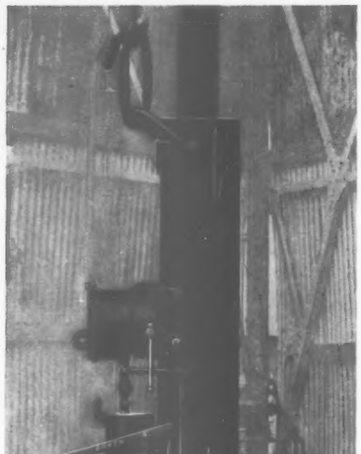


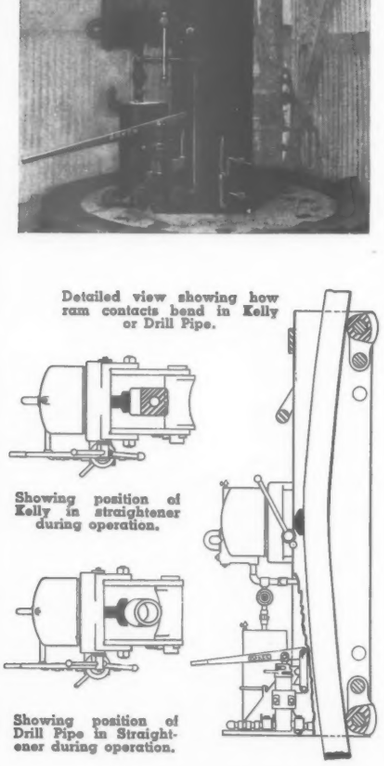
BAKER PORTABLE HYDRAULIC KELLY and PIPE STRAIGHTENER

STRAIGHTENING IS EASY AND ECONOMICAL . . .

The Baker Kelly Straightener is an easily operated device, utilizing the principle of the hydraulic ram, applying the force built up by manually operated pump to the bend in the Kelly, drill collar, or drill pipe as it hangs suspended in the derrick.

COMPLETELY PORTABLE

The entire unit is completely portable (weighing only 1200 pounds), and can easily be transported to the well on a small "pick-up" truck or trailer and set up on the rotary table by means of the cat line.



Detailed view showing how ram contacts bend in Kelly or Drill Pipe.

Showing position of Kelly in straightener during operation.

Showing position of Drill Pipe in Straightener during operation.

ADVANTAGES OF STRAIGHTENING AT THE WELL . . .

Even though shop facilities may be close at hand, there are a number of important advantages in straightening at the rig—advantages that result in substantial savings in time and money. Probably more Kellys are bent during transportation and in being laid down and picked up than from any other cause. Frequently a Kelly that has just been straightened will again be bent during the process of transporting it back to the well, rolling it off the truck and dragging it into the rig.

When the BAKER KELLY STRAIGHTENER is used, the job is done right on the rotary table with the Kelly hanging in its normal position. The hazards involved in transportation and handling are entirely eliminated as are also the cost of transporting the Kelly to and from the well, plus the time and expense entailed in removing and replacing it. In foreign or isolated fields, however, the Baker Kelly Straightener is considered indispensable as the cost and loss of time involved in transporting a bent Kelly or drill pipe to and from a distant shop makes it a serious matter.

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By the attachment of a simple, easily installed device, the Baker Kelly Straightener can also be adapted for efficient, horizontal pipe straightening work. The same high efficiency and portability is maintained, plus the advantage of being able to utilize the Straightener for a wide variety of pipe straightening operations around the field and in the shop.

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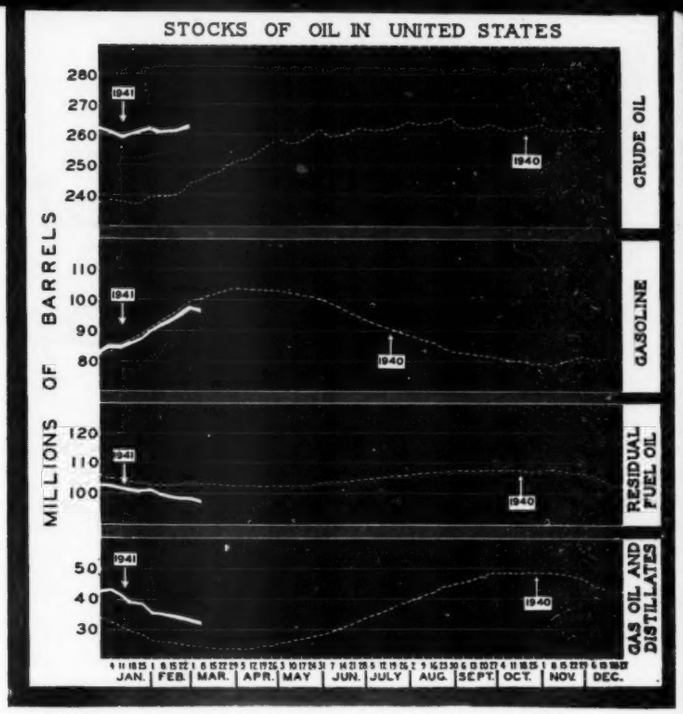
Trends

Substantial Gains In Imports Factor In Domestic Needs



THE recent increases in imports of crude oil and refinery products are being widely discussed within the industry as to their probable effects on domestic crude-oil and refinery operations over the remainder of the year. It was assumed by many at the start of the year that there would be no large increases in imports after the large gain in 1940 over 1939 because of the tax situation. Under the reciprocal trade agreements fostered by the State Department, the reduced tariffs on petroleum imports do not apply when they exceed in volume 5 per cent of the domestic refinery operations. That maximum was reached last year which meant in effect that any increases this year would pay the full import tax of 21 cents per barrel on crude and fuel oil instead of the 10½-cent rate per barrel for shipments coming within the 5 per cent agreement.

CRUDE PRODUCTION *3,635,840 bbl. daily average—up 12,405 bbl. One year ago 3,826,363 bbl.*

CRUDE STOCKS *263,176,000 bbl. as of March 1—up 1,393,000 bbl. One year ago 244,126,000 bbl.*

GASOLINE STOCKS *97,178,000 bbl. as of March 8—down 332,000 bbl.* One year ago 100,434,000 bbl.*

RESIDUAL FUEL-OIL STOCKS *97,372,000 bbl. as of March 8—down 1,275,000 bbl. One year ago 103,100,000 bbl.*

GAS OIL AND DISTILLATES *32,429,000 bbl. as of March 8—down 1,296,000 bbl. One year ago 24,239,000 bbl.*

REFINERY RUNS *3,505,000 bbl. daily week ended March 8—down 80,000 bbl. One year ago 3,450,000 bbl.*

*March 1 stocks revised to 97,510,000.

The fact that there have been further reductions in European and other Eastern Hemisphere markets for crude oil and refinery products of South American countries and Mexico has caused producers and refiners in those areas to absorb the additional tax and their shipments to this country have increased. For the last 2 weeks of February these imports under bond and for domestic consumption—consisting largely of crude oil and fuel oil—averaged 295,786 bbl. daily. This is an increase of approximately 70,000 bbl. daily over last year.

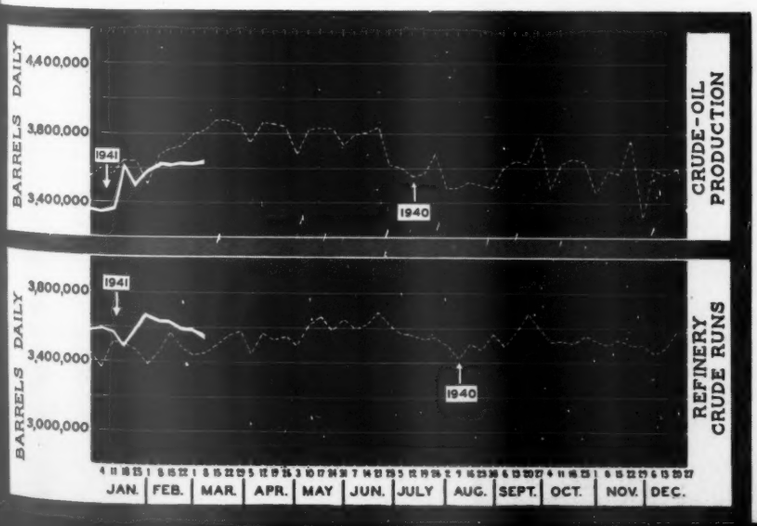
These data on supplies from foreign fields and refineries are being considered in connection with reports covering operations in this country which show that domestic crude-oil production for the first 67 days of this year was about 3 per cent under the same period last year with a 3 per cent increase in refinery operations. The industry is approaching a situation in which the imports and exports are about equal—a development which is certain to have market significance so long as it continues.

DAILY AVERAGE PRODUCTION FOR WEEK

	Mar. 8, 1941	Bur. Mines Mar. est. of demand	March state allowables	Mar. 1, 1941
Arkansas	70,715	69,700	69,969	69,820
California	610,150	596,400	571,500	587,250
Eastern fields	113,675	119,100	.....	113,400
Illinois	325,420	335,200	.....	328,675
Kansas	191,550	194,200	198,200	202,550
Louisiana	296,080	291,300	308,190	292,775
North Louisiana	*69,730*	.....	.....	*70,475*
Louisiana Gulf Coast	*226,350*	.....	.....	*222,300*
Michigan	39,775	47,700	.....	40,215
Mississippi	20,590	20,300	.....	20,395
Nebraska	3,375	3,200	.....	3,350
New Mexico	106,380	103,900	110,000	106,340
Oklahoma	402,850	437,400	400,000	409,725
Rocky Mountain states	105,880	109,700	.....	103,940
Texas	1,349,400	1,327,400	1,352,489	1,345,000
East Texas	*374,450*	.....	.....	*374,575*
West Texas	*236,800*	.....	.....	*236,125*
North Central Texas	*131,600*	.....	.....	*131,300*
East Central Texas	*72,450*	.....	.....	*73,175*
Texas Panhandle	*72,800*	.....	.....	*68,075*
Texas Gulf Coast	*368,350*	.....	.....	*369,150*
Southwest Texas	*92,950*	.....	.....	*92,600*
Total United States	3,635,840	3,655,500	.....	3,623,435
Total production, Jan.1-Mar. 8, 1941			*213,416,775 bbl.	
Same period last year			220,552,836 bbl.	

There are no indications now that this comparison will change so long as large European markets are cut off from world trade through war developments. Some economists include in their analysis of this situation the fact that further restrictions may develop soon in the movement of exports from this country to Japan and other buyers of the Far East.

In this connection, some of the importers are stressing the fact that these inshipments are largely confined to the heavy crude oils and residual fuel oils and they do not directly affect domestic prices for gasoline and other low-boiling-point products. Regardless of the merits of the various contentions it is apparent that the competition of domestic and foreign petroleum supplies is increasing in intensity, a development of special importance this year to producers of domestic crude oils.



Shifts in Crude-Oil Sources Develop Pinches in Market

By H. STANLEY NORMAN

STRENGTH of the crude-oil market, which is nearer now to a general advance than at any time in more than 3 years, had its genesis in the middle of last year. The general trend to firmness has been gaining momentum since last July. Active competition for new crude-oil connections, pleas of purchasers for additional oil at a majority of the recent proration hearings and extension of gathering and trunk pipe lines all attest to the current demand for crude.

Strength of the crude market under present conditions is virtually a phenomenon since it is unsupported by a compensating lift in the price for products. Gasoline prices are shedding some of the lethargy that has characterized this key product for more than a year. It is doubtful, however, that even a modest profit prevails on the weighted average refinery motor-fuel sales, despite scattered price advances.

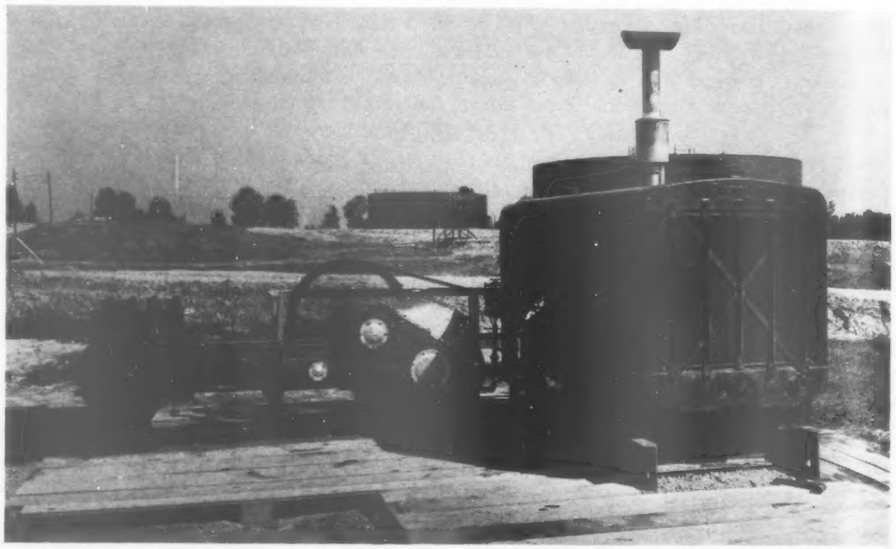
Recent advances in the Gulf Coast gasoline market give the first tangible evidence that motor-fuel prices may climb this summer into the list of commodities returning a reasonable profit to the manufacturer. Trends in the gasoline market are still too indefinite to point a positive course, observers assert. Much depends on operations in the large producing states over the next few months.

Still, the crude market is growing more bullish. Moderate advances have been made in Michigan, in one or two of the smaller Illinois fields and three increases of 15 cents each have been applied to Pennsylvania Grade crude since last November.

Crude-market strength fans out chiefly from the middle western producing states which have become increasingly dependent on supplies from the Mid-Continent. The Illinois production curve, tending to flatten out in recent weeks, is, nevertheless, nearly 200,000 bbl. daily lower than it was 8½ months ago.

Data on distribution of crude oil last year prepared by the Bureau of Mines disclose some significant trends. They show, for example, that Illinois received 10 per cent more interstate crude in 1940 than in 1939. Still, total receipts from other states were 41 per cent lower than in 1938 when development of the basin fields first started. Bureau of Mines data also show that six states are the sources for 87 per cent of all domestic crude moving in interstate commerce. Another significant highlight is that three states, Texas, Pennsylvania and Indiana, each receive more than 15 per cent of the total domestic interstate oil movement.

Despite the lack of more recent statistical confirmation, there is abundant evidence that the shift in crude demand continues at an accelerated pace. Pipe-line construction programs are under way or planned that will equip refining and purchasing companies in the Middle West to move Texas crude to the Chicago district or even to the eastern seaboard if economics of transportation justify inland shipments. Observers of crude demand and market conditions have predicted that East Texas oil may move north this summer.



A field pumping station in Illinois. The scope of distribution is being gradually narrowed as the volume of crude from Illinois is now 200,000 bbl. daily below its 1940 peak

Gulf Pipe Line Co.'s main-line station at Jenks, Okla., one of the vital links in moving oil from southern fields to the northern and eastern refining centers via the company's system

The possibility of additional crude from Illinois, either from new fields or from deeper pays, must be considered as one of the intangible elements in the general belief that increasing quantities of oil will be required from the more southern producing states. Crude procurement programs are based on the known factors. Unforeseen discoveries provide the flexibility.

Receipts of interstate oil shipments, shown in Table 1, reveal that 1,332,000 bbl. daily qualified for this classification last year against 1,250,000 bbl. in 1939 and 1,219,000 bbl. in 1938. The most substantial increase was registered by Ohio which received 53,126,000 bbl. last year, a gain of 12,265,000 bbl. over the total reported for 1939. Most of the Ohio increase centered in the western part of the state indicating the influence of Illinois production on crude movement and refining operations.

The increase of 2,281,000 bbl. in receipts of out-

side oil by Michigan is nearly 60 per cent greater than 1939, which correlates closely with the trend of production in that state. Illinois supplied a relatively steady flow of 365,000 to 561,000 bbl. per month for a total of 5,714,000 bbl. During the season of peak demand in September, October and November it was necessary for Michigan refiners to draw 391,000 bbl. from Oklahoma operators.

TABLE 1—INTERSTATE OIL RECEIPTS

(Thousands of barrels)

	1938	1939	1940	% of 1940 total
Arkansas	28	. .	. .	. .
California*	. . .	288	504	.100
Colorado	405	861	1,989	.408
Georgia†	118	565	649	.133
Illinois‡	39,038	20,443	22,788	4.673
Indiana	67,672	75,509	74,270	15.230
Kansas	13,220	12,852	11,357	2.329
Kentucky§	2,329	5,073	8,181	1.678
Louisiana¶	30,721	26,048	28,227	5.789
Maryland	10,271	9,529	9,371	1.922
Massachusetts‖	10,955	12,184	16,652	3.415
Michigan	3,869	3,824	6,105	1.252
Missouri	6,686	7,310	8,404	1.724
Montana	1,639	2,125	2,619	.540
New Jersey	61,556	63,772	66,501	13.639
New Mexico	394	395	426	.090
New York	9,024	10,696	13,854	2.842
East	*5,519*	*6,172*	*6,429*	*1.319*
West	*3,505*	*4,524*	*7,425*	*1.523*
Ohio	34,752	40,861	53,126	10.896
East	*10,239*	*11,789*	*13,456*	*2.760*
West	*24,513*	*29,072*	*39,670*	*8.136*
Oklahoma	2,667	4,418	4,792	.983
Pennsylvania	69,712	75,202	76,061	15.692
East	*67,071*	*71,903*	*72,563*	*14.882*
West	*2,641*	*3,299*	*3,498*	*.810*
Texas	75,524	79,748	76,252	15.639
Utah	2,998	2,785	3,299	.675
West Virginia	1,147	1,178	1,788	.367
Wyoming**	132	340	362	.074
U. S. total	444,857	456,006	487,577	
Daily average	1,219	1,250	1,332	

*Includes Washington. †Includes Delaware, South Carolina and Virginia. ‡Includes Minnesota. §Includes Tennessee. ¶Includes Alabama and Mississippi. ‖Includes Rhode Island. **Includes Idaho, Nebraska and South Dakota.

Missouri's interstate oil traffic offers another example of changes resulting from the rapid increase and relatively sharp decline in Illinois' oil production curve. During the first 5 months of 1940 an average of 23,000 bbl. monthly moved west from Illinois to Missouri. This traffic ceased in June. Indications are that Missouri drew all of the deficit and then some from Kansas. Shipments from Kansas to Missouri totaled 203,000 bbl. for the first 5 months of last year and during the remaining 7 months deliveries were stepped up to 1,848,000 bbl., an average of 40,600 bbl. monthly for the short period and 264,000 bbl. per month for the long.

Interstate oil shipments originating in Illinois and ending in various of the nine states receiving crude from that source in 1940 show even more strikingly the basic changes. Crude disbursements from Illinois in the first 6 months totaled 41,319,000 bbl. and declined to 35,473,000 bbl. in the last half of the year. The peak month was July when 7,719,000 bbl. moved in interstate commerce and the low of 4,549,000 bbl. occurred in November. Low for the year was 41 per cent under the top figure.

Through the last 5 months of the year deliveries of Illinois crude to New Jersey were cut sharply. Average shipments in the first 7 months were 419,000 bbl. monthly. The rate dropped to 144,000 bbl. monthly in the last 5 months, hitting a low point of 1,000 bbl. in November. Illinois crude deliveries to eastern Pennsylvania refineries totaled 1,778,000 bbl. in the first 10 months, but this traffic ceased completely at the end of October and has not been resumed. The slack in Pennsylvania receipts caused by termination of Illinois shipments accrued to the benefit of New Mexico, Texas and Oklahoma producers.

Texas holds a slight margin over Pennsylvania as the state receiving the most domestic crude through interstate transportation arteries. Indiana refineries are the third largest consumers of interstate crude oil and New Jersey's plants are fourth. Ohio, Louisiana, Illinois, Massachusetts and New York follow in that order. Crude-oil shipments to Massachusetts, originating principally in Texas, increased 36.6 per cent last year over 1939 and averaged more than 45,000 bbl. daily. This increase is due largely to expansion of refining capacity in the latter part of 1939. Massachusetts was not among the eastern seaboard refining states receiving Illinois crude during the peak of the latter state's production climb.

Indiana turned to Kansas and Oklahoma for the crude no longer obtainable in Illinois. Runs averaging 87,000 bbl. monthly from New Mexico to Indiana during the first 6 months of last year also were switched to Kansas and Oklahoma suppliers. During the last half Oklahoma deliveries to Indiana were increased about 4,000,000 bbl. to a total of 18,836,000 compared to 14,560,000 bbl. in the first 6 months. Kansas shipped 7,630,000 bbl. of crude to Indiana in the first 6 months and increased deliveries to 10,166,000 bbl. in the second half for a yearly total of 17,996,000 bbl.

While Texas heads the list of states receiving interstate shipments of crude with a grand total of 76,252,000 bbl. in 1940, it is also the largest dispatcher of oil to domestic refineries elsewhere. The state ships nearly 2 bbl. for each 1 bbl. received. A favorable interstate-traffic balance of 66,698,000 bbl. obtained last year, shipments exceeding receipts by that margin.

Texas supplies 32 per cent of the crude moved in interstate commerce by the six large shippers. Oklahoma, with 22 per cent; Illinois, 17 per cent; Louisiana, 13; New Mexico 8 and Kansas 5 per cent, follow in that order.

Pennsylvania Large Consumer

The largest consumers of crude shipped from Texas in interstate commerce are the refineries in the eastern part of Pennsylvania which receive about 35 per cent of the supplying state's total distribution. New Jersey refineries take nearly 28 per cent of Texas' crude shipped within the country and Massachusetts accepts a little more than 10 per cent. Indiana receives nearly 34 per cent of Oklahoma's crude shipments with Pennsylvania, Texas, Ohio and Kansas closely grouped at a range of 11 to 12.5 per cent each.

Ohio received 51 per cent of Illinois' oil moved in interstate commerce last year. Ohio's portion of the total has since expanded until it is now probably not less than 55 per cent and perhaps 60 per cent. Indiana takes about 17 per cent of the Illinois shipments and western New York receives 9 per cent.

Texas is the outlet for 68 per cent of Louisiana's interstate oil traffic. New Jersey takes about 14 per cent and Pennsylvania nearly 11 per cent.

New Jersey sends 55 per cent of its interstate oil shipments to Texas, 15 per cent to New Jersey and 12 per cent to Illinois.

Indiana accepts 68 per cent of Kansas' crude shipments, Oklahoma 15, Illinois nearly 9, and Missouri 8 per cent.

A tendency to constrict the scope of distribution on Illinois' crude has been the most significant result of developments over the past 8 or 9 months. A firm demand exists for all current production in Illinois. Interruptions in the operations of small refineries built over the past 3 years in Illinois have become more frequent as the production curve declines.

Fairfield Refining Co.'s 1,800-bbl. plant at Fairfield, Ill., one of the small refineries typical of several whose operations have been interrupted by tightening of crude supplies

TABLE 2—INTERSTATE OIL MOVEMENT TO REFINERIES

Receiving states—	Principal shipping states in 1940 (figures in thousands of bbl.) Texas	Oklahoma	Illinois	Louisiana	New Mexico	Kansas	Six states' total
Illinois*	6,031	9,018	. . . . .	217	4,507	2,208	21,981
Indiana	5,642	33,396	13,154	. . . . .	521	17,996	70,709
Kansas	266	10,890	. . . . .	. . . . .	. . . . .	. . . . .	11,156
Kentucky†	. . . . .	177	5,679	. . . . .	. . . . .	. . . . .	5,856
Louisiana‡	12,457	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	12,457
Maryland	6,061	. . . . .	. . . . .	2,698	336	. . . . .	9,095
Massachusetts§	14,766	. . . . .	. . . . .	864	928	. . . . .	16,558
Michigan	. . . . .	391	5,714	. . . . .	. . . . .	. . . . .	6,105
Missouri	438	3,500	115	. . . . .	. . . . .	2,051	6,104
New Mexico	426	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	426
New Jersey	40,017	3,998	3,653	8,564	5,711	. . . . .	61,943
New York	6,429	. . . . .	6,547	. . . . .	. . . . .	. . . . .	12,976
Eastern	*6,429*	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	*6,429*
Western	. . . . .	. . . . .	*6,547*	. . . . .	. . . . .	. . . . .	*6,547*
Ohio	. . . . .	11,763	39,233	4	. . . . .	. . . . .	51,000
Eastern	. . . . .	*59*	*12,997*	. . . . .	. . . . .	. . . . .	*13,056*
Western	. . . . .	*11,704*	*26,236*	*4*	. . . . .	. . . . .	*37,944*
Oklahoma	721	. . . . .	. . . . .	. . . . .	. . . . .	4,071	4,792
Pennsylvania	49,696	12,327	1,791	6,561	4,115	. . . . .	74,490
Eastern	*49,696*	*10,176*	*1,778*	*6,561*	*4,115*	. . . . .	*72,326*
Western	. . . . .	*2,151*	*13*	. . . . .	. . . . .	. . . . .	*2,164*
Texas	. . . . .	11,811	. . . . .	41,965	20,256	. . . . .	74,032
Utah	. . . . .	. . . . .	. . . . .	. . . . .	5	. . . . .	5
West Virginia	. . . . .	461	906	. . . . .	. . . . .	. . . . .	1,367
Wyoming¶	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	13	13
Total	142,950	97,732	76,792	60,873	36,379	26,339	441,065

*Includes Minnesota. †Includes Tennessee. ‡Includes Alabama and Mississippi. §Includes Rhode Island ¶Includes Idaho, Nebraska and South Dakota.

SPARKS . . . FROM THE NEWS

IN REVERSE: Striking illustration of crude-market readjustments —crude oil is moving to Chicago by pipe line from a Texas field located but 6 miles from a Gulf Coast port.

NEWCOMER: The recent announcement of a major company indicates that western Oklahoma may be added to the areas where recycling operations are conducted in connection with condensate-production operations.

QUESTION: To what extent are Hitler's latest moves in the Balkans dominated by a desire to destroy or acquire the oil supplies of Iran and Iraq?

PROVING GROUND: At the hearing last week to consider inundating the Nowata field in connection with a proposed flood-control method, attention of U. S. Engineers was directed to the significance of production of oil by secondary-recovery methods employing water injection in that area, which is the proving ground for this technique in the Mid-Continent.

TWO-WAY OUTLET: North Texas with its new discoveries and steady expansion of old areas has an advantage over most other oil areas in that it has facilities to move its output north and south.

IF NEED BE: The United States could make more aviation gasoline of 100-octane number than its present total output of all kinds of gasoline. No other nation can come close to doing half this well.

SLOW, BUT SURE: Kansas' oil industry, like Topsy, "just growed." Booms are few, but it keeps getting bigger.

DOUBLE: First to feel the pickup from foreign war demands is the region farthest from battlefronts and waterfronts — Montana. Twice as many wells have been drilled this year as last.

MODERNIZATION: With several million acres leased in western Nebraska and few roads, scouts will have to use airplanes to cover the activity once drilling starts.

NEXT MOVE? Georgia's legislature has refused the right of eminent domain to pipe-line operators. The next move may come from the Defense Commission which wants the lines built.

DOING THEIR PART: Crude production remains some 3 per cent below last year's levels while refinery runs show an increase of the same amount. As a result crude storage remains stationary and the market is slowly strengthening.

AGAIN: Domestic gasoline consumption has a habit of exceeding the predictions of economists. Developments so far this year point to a 1941 increase of 10 per cent or 60 million barrels—the largest yearly gain in the industry's history.

THE BOTTOM: Announcement that the St. Peter sand test of Texas Co. in the Salem pool was dry proves that all good things must come to an end. It also eliminates the chance of any flooding of the market due to a huge Illinois flush.

IN AND OUT: With further restrictions in their normal outlets, Latin-American oil shipments to this country have increased to the point where they are approaching the exports of domestic producers and refiners.

WHITE FATHER: Uncle Sam, looking out for his Indians, has ruled that a lease holder must either drill or pay if the underlying reservoir is being drained.

AULD LANG SYNE: Oklahoma's one-time state capital, Guthrie, held open house to celebrate the opening of a new oil pool nearby and thus revived an almost forgotten custom.

FUELS FOR FLYING FORTRESSES . . .

Acme

This type of truck and trailer forms another link between the oil industry's refineries producing aviation gasoline and the rapidly expanding Army Air Corps operations. Gasoline consumption related directly and indirectly to defense, analyzed in this issue on Page 11, is outstripping preliminary estimates of demand

Ten Per Cent Gain in Domestic Gasoline Needs Assured

By C. O. WILLSON

The Journal's editor over the past month has been visiting important operating points in the Southwest, Middle West and eastern part of the United States. In this article he discusses developments which have to do with petroleum consumption trends as revealed by first-quarter operations.

Next week, marketing conditions with special consideration of the unsatisfactory gasoline situation, will be outlined, based on interviews with representative leaders whose collective operations extend to all parts of the petroleum world.

NEW YORK, Mar. 11.—Domestic gasoline consumption so far this year is running 10 per cent ahead of the same 1940 period.

This statement is based on information obtained from representative large and small companies, marketing motor fuels east of and including the Rocky Mountain states. Less complete reports indicate that increased sales in the three West Coast states are in line with the average of the remainder of the country.

In no case is the estimated increase of individual companies for their marketing sections under 8 per cent, with gains up to 14 per cent reported for important consuming areas. The increase of 10 per cent appears to be a fair average and this figure is supported by the data available from reports of the Government and other statistical agencies.

The 10 per cent increase in domestic gasoline consumption is 2 to 4 per cent greater than the predictions of most statisticians of the industry at the start of the year, including that of this publication. The car registrations at the start of the year and the expected motor-vehicle production for 1941 pointed to an increase in motor-fuel consumption in this country of 35 million barrels, or 6 per cent, making a total of 625 million for the year. If the indicated rate of increase of the first 70 days continues throughout the year, as many economists now predict, the 1941 increase will be in the order of 60 million barrels, with a total for the year of 650 million barrels. A 60-million-barrel gain would be the largest yearly domestic increase in the history of the industry.

Overall Gain

While complete information is not available, it is agreed that gasoline exports are running behind last year. That comparison applies to both the first and last quarters of 1940. Gasoline shipments to several outlets in the Eastern Hemisphere have been further curtailed this year with no indication that this situation will change in the near future. However, refiners in this country are not faced with the situation that confronted them last year when gasoline exports dropped 19½ million barrels, or 43 per cent. The gasoline export market now represents only 4 per cent of the total demand in this country and the declines reported this year are not of controlling importance in view of the large domestic gains.

Most sales managers feel that the exceptional increase is explained by defense requirements. Aviation-motor-fuel consumption has greatly increased. In addition to the enlarged current needs of the commercial transportation systems and the military, the Army and Navy are engaged in a substantial storage program. While most of this storage at present is at the refineries, ownership rests with the military units and for that reason it represents additional domestic consumption so far as the operations of the oil industry are concerned. Later, this storage will be transferred to military terminals and will be maintained permanently as part of the defense program.

Aside from aviation, company reports indicate that the defense program is affecting the domestic consumption of the regular grades of motor fuels, giving employment to several million men who formerly were either unemployed or engaged in government projects at low wages. One market student says this situation has reduced the number of second-hand cars normally out of service at this season of the year. This same observer explains that large Army and Navy fleets of all types of motor vehicles for training have been going into service rapidly since the first of the year. These vehicles are larger per-unit consumers of gasoline than the average in civilian use.

In this connection, reports also indicate that the location of defense industries is having an effect on gasoline requirements. Some of these plants are isolated and thousands of employes are compelled to drive their cars several miles to and from work. A similar situation exists in the case of the Army camps now under construction. Finally, it is believed that the widespread industrial and general business activity has been more of an impetus to gasoline demand among all classes of consumers than was estimated at the start of the year.

Outlook

So far as can be determined now, the factors which have brought this exceptionally large gain in domestic gasoline demand will continue the second quarter and probably throughout the year. In fact, some observers feel that the gains brought about by the defense program will be more pronounced as the year progresses.

A possible development which would be a negative factor in this upward trend is discussed by some. This involves the application of priorities so that automobile manufacturers will not have the materials to maintain full-scale operations later in the year. It is feared that as certain phases of the defense-construction program expand—notably the production of airplanes—it will be necessary to restrict the sale of certain materials to car manufacturers and their sales to civilians will be curtailed. It is also pointed out that most of the car manufacturers have orders for defense other than motor vehicles and expansion of this demand will take precedence over the usual plant output. Contrary to this view, several car manufacturers have announced that they expect to take care of all demands for their products throughout the year.

Other Products

The same reports which stress the favorable gasoline situation reveal conditions in other products which are also significant. The expected large increases in demand for products classed as distillate and gas oil in government and A.P.I. reports have not materialized. There are numerous outlets for the several grades of these products but the industry generally considers them from the standpoint of heating oils. Last winter unusually low temperatures in the areas which consume the bulk of these overhead heating oils brought a large increase in demand with stocks at exceptionally low levels when the season ended. This year the milder temperatures which have aided the gasoline demand have had the opposite effect in furnace-oil sales.

More burners have been in operation this season but the overall domestic demand, it is said, has shown only a small gain over last year. According to one authority, the decreased exports of these products so far this year have probably offset the small growth in domestic requirements so that the total demand has been about the same as last year.

The demand for residual oils so far this year is estimated to be 4 to 5 per cent over the same period in 1940. There is a scarcity of these oils at several middle western points where the defense industries are operating at capacity. Gains at these interior points do not apply to some of the coastal areas where domestic demands are approximately the same as last year.

The demand for industrial lubricants, according to those in daily touch with the markets for these products and motor-oil sales, are also running ahead of last year by 5 per cent or more.

The foregoing reports covering the increased demand for the principal refinery products add up to a total gain for all products of around 8 per cent, which is in line with the estimate for 1941 of the Bureau of Mines, announced in January.

It is explained that this should not be interpreted as meaning a similar increase in domestic crude-oil requirements. Increased yields of gasoline from crude oil and enlarged imports of both crude oil and heavy fuel oil are direct factors in determining the quantity of domestic crude oil required to supply these expanding outlets for finished products. Latest reports show that imports, under bond and for domestic consumption, have jumped to around 300,000 bbl. daily. It will be necessary to obtain complete information covering all phases of this import development before a final conclusion can be reached as to the requirements from domestic fields. Recent reports covering domestic crude-oil production and stocks suggest that the actual current demand for domestic crudes the first 3 months will not be more than 3 per cent over the first quarter of 1940.

Kansas Activity Curve Upward As New Markets Open

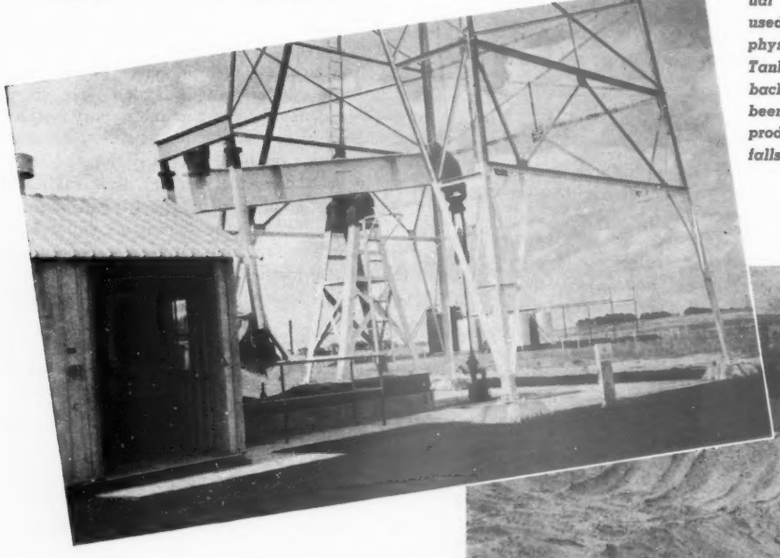
By ROBERT INGRAM

Kansas has been on the upswing for the past 9 months and recently the state's production figure has been hovering around 200,000 bbl. daily. Increased field development and wildcatting activity, expanding markets, and quicker return on investment due to wider spacing give Kansas a bright outlook for the remainder of the year.

SURELY and steadily, but without the fanfare of any single spectacular development, the oil business in Kansas continues on the upgrade. Both the causes and results of the expansion are reflected in the week-to-week statistics on drilling, production and marketing and separate factors affecting each phase have combined to put the industry in the state as a whole on a sound, growing basis.

Equally responsible for the improvement are (1) wide areas favorable to exploration, (2) opening of new markets due to the drop in Illinois production, and (3) more profitable operations for the majority of operators resulting from wider spacing.

Exploration in western Kansas has followed, with highly successful results, the general northwest trend of the so-called Barton arch, or Central Kansas uplift, and the cross trends on the flanks. New pools opened in recent months in Stafford and Barton counties have extended prospecting on the southwest flank of the arch, and discoveries in Russell and Ellsworth counties have done the same to the northeast.



Left: Large individual pumping unit used for taking physical potential. Tank battery in background has been reduced as production on lease falls off

Right: Rigging up pits for a slim-hole rotary test near Ellinwood, Kans. Reduction in drilling costs has been one way the Kansas operator has increased profits

Meantime the big play of the next few months is expected to open up near the Nebraska State line in Phillips and Norton counties as a result of the opening of the northernmost production along the general trend of the arch last fall in the Ray pool of Phillips County.

Cities Service Oil Co. opened the Ray pool in September 1940, with production from the Reagan sand, in Section 32-5-20w. Since then seven producing wells have been drilled by Cities Service, and a dry hole, which had a show in the granite wash, was drilled by Cetal Oil Co. ¼ mile to the southwest. A heavy leasing play has followed the Ray pool development and has extended across the Kansas line into Harlan and Furnas counties, Nebraska.

Drilling has already started in southwestern Nebraska, with a dry hole completed by Barnsdall and Helmerich & Payne at 1 Erickson, SW SW SW 8-1n-23w, in Furnas County, and a new test drilling in Harlan County near the city limits of the town of Alma at Ohio Oil Co. 1 Battin, N½ SE NW 15-2n-18w.

In the more developed areas drilling has also been successful, and although dry holes are frequently drilled only one location from production, experience shows they do not define the limits of the pools in most cases, and the tendency for small pools to be joined into large producing areas continues. Already, since the first of the year, sufficient evidence has been put forth to warrant the joining of Silica and South Silica pools. Extensions at Hall-Gurney, Trapp, Bemis-Shutts and Geneseo indicate that more pools will be joined soon.

In spite of the fact that snow and rain have bogged down many an oil field during the winter months, total operations for the state are up. Last week there were 283 wells drilling, rigs up and locations made. This was a jump from 245 active operations a year ago of 15.9 per cent.

Operations Widespread

As pointed out above, the gain in operations is confined to no single area, but is general throughout prospecting and producing areas of the state. That it is also a result of a steady rise over a period of months is shown in the number of completions which has gradually risen to 259 for the first 2 months of 1941 as compared to 214 for the same period of 1940, a gain of 45 completions in 60 days.

Wildcatting success has risen proportionately with the number of operations. Four new pools have been opened—one each in Stafford, Ellis, Barton and Cowley counties—and extensions to producing areas have been made at Hall-Gurney, Canton North, Kraft, East Trapp, Beaver and Hagen since January 1.

This general gain in activity has increased the number of prorated wells in the state from 5,611 as of February 1, 1940, to 6,713 on the same date this year, an increase of 1,102. Little change is reported in the number of unprorated wells, with the 14,066 reported by the Kansas Corporation Commission February 1, 1941, representing an in-

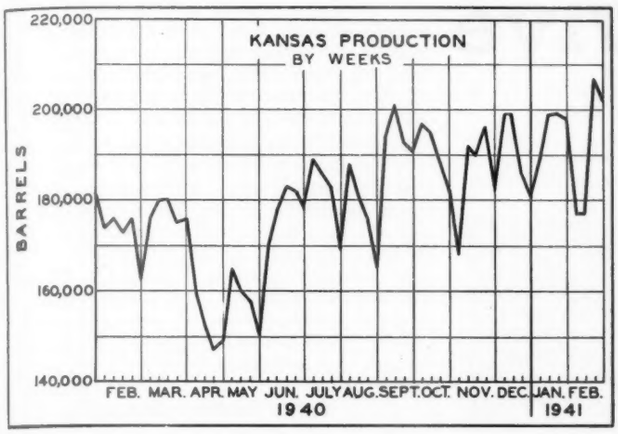
crease of only 10 from the same date a year ago.

What effect the new wells have had on the potential production of the state is impossible to determine, due to the fact that the productivity-index method of computing potentials has been inaugurated in many Kansas fields. However, the general opinion in oil circles is that the state's capacity to produce was increased from 10 to 20 per cent during the past year.

It is admitted that the potential of 7,097,209 bbl. for the state as reported by the commission (which represents a jump of 2,253,906 bbl. from the potential 4,843,303 bbl. reported a year ago) does not reflect the true picture. What the actual potential is can be only a conjecture at best.

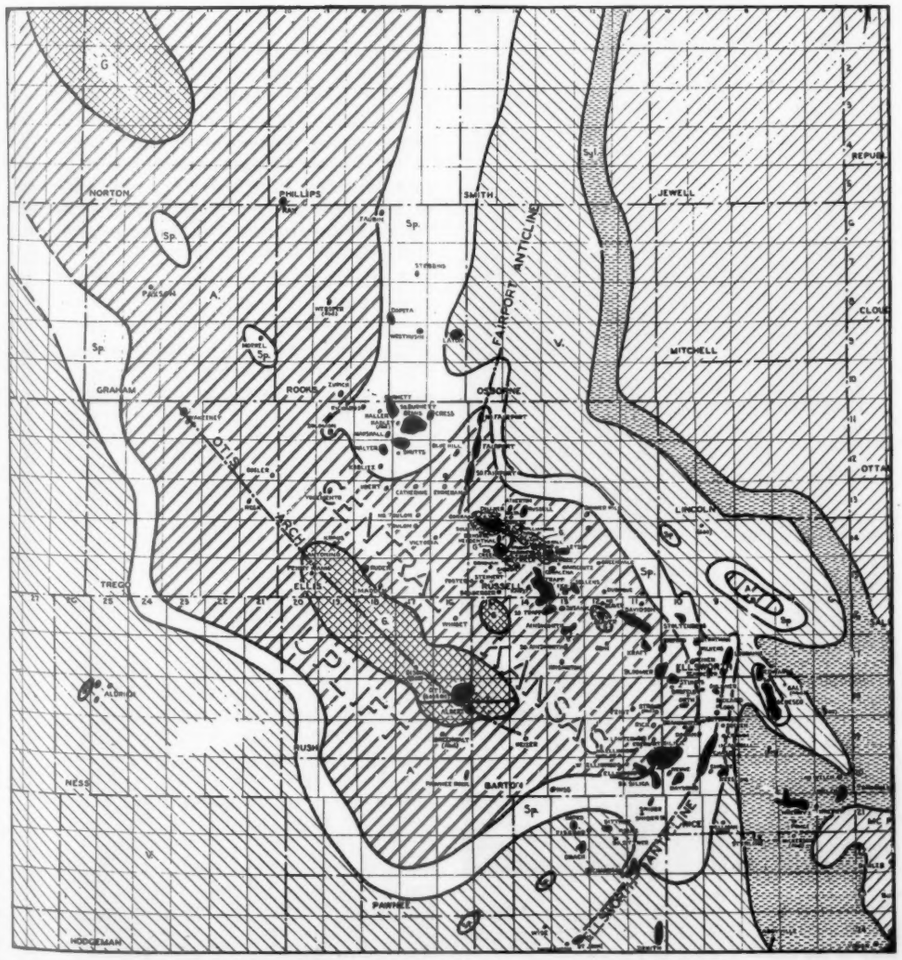
Nonetheless, actual production has been able to meet the increasing demand from refiners without any strain, and the industry is confident it has a long way to go to reach capacity. Total daily average production for the state has been set by the Corporation Commission for March at 198,200 bbl., again a sizable gain over the actual daily average production of 174,263 for March 1940. The daily allowable for the month is also up 2,000 bbl. from February.

Production in Kansas has been rising since the first of May 1940, when it hit a low of 148,000 bbl. daily. Prior to that time the trend had been mostly downward. Since the middle of last September the state's output has been hovering around the 190,000-bbl.-a-day mark, but it has edged upward until it reached a peak the last week in February when a daily average of 207,000 bbl. was produced.



Kansas production, as illustrated by the chart at left, has shown a steady trend upward since April 1940. It reached an all-time high the third week in February this year, and, although it has fallen off again the past 2 weeks in a periodic fluctuation, is expected to continue the general rise

Below is shown a regional geologic map of the Central Kansas uplift, or Barton arch, where most of the wildcatting and development work in the state has been concentrated



The sensitiveness of purchasers of Kansas crude to the expanding market is reflected by the fact the uptrend started in May. Illinois production, which was blocking off part of the market, did not reach its peak and start downward until the middle of June.

While a general improvement of markets has undoubtedly accounted for some of the gain in production, a highly important factor has been the drop in production from Illinois and the resulting demands of eastern refiners for Kansas crude.

And still another important cause of the gain in activity is the new method of giving full consideration to acreage in computing the allowable of individual wells and the resulting wider spacing. In most cases 20-acre spacing, as opposed to closer drilling, has meant that the new wells are given a greater allowable than formerly. Thus, for example, two wells on 40 acres may be given an allowable comparable to three in the same-size area and the cost per barrel recovered has dropped considerably.

As a result, wells often pay off much quicker than under the former close spacing, and operators have been able in recent months to develop properties at a profit which have been considered in the marginal class. In some cases under the old order leases were not being developed because of the lack of financing and the likelihood that the wells would only break even or possibly lose money.

Kansas operators are not in complete agreement on the wider spacing. However, most of them favor it, and 20-acre spacing is becoming more and more widespread.

Best guess for the immediate future is that operations will continue to pick up, production will rise and the general oil industry in Kansas will expand steadily for some time to come. The rise is expected to be general and affect all areas of the state, with particular emphasis on the northwest for rank wildcatting.

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Texas Bill Would Remove Oil Regulatory Duties From Railroad Commission

AUSTIN, Tex., Mar. 11.—Way was cleared last week for floor consideration of the house bill that would strip the Texas Railroad Commission of its oil and gas conservation regulatory duties and create an appointive body. The bill was reported favorably from the house state-affairs committee by a vote of 11 to 8 after many hours of testimony by both proponents and opponents.

Arguments for the proposal included contentions it would abolish politics in administration of conservation statutes, would permit more efficient regulation, prohibit discrimination in allowable production allocation and eliminate complaints.

Witnesses appearing against it praised the Railroad Commission for having done a "magnificent" work and asserted creation of an appointive agency would be a blow to democracy, a repudiation of services well performed, would not remove political pressure and could establish a dictatorial group not responsible to the people.

Arguments that the oil industry has expanded to a point requiring the full attention of a conservation commission were spearheaded by R. H. Foster, of Fort Worth, Tex., executive vice president of Landreth Petroleum Co. He said that the oil and gas industry in Texas employs directly or indirectly 221,000 people with an annual pay roll of $272,000,000.

Mr. Foster used the following table to emphasize growth of the industry since the Railroad Commission was first given regulatory duties in 1919:

	1919	1940
Number of fields	50	550
Number of oil wells	5,500	95,000
Number of gas wells	650	4,000
Value of oil production	$158,000,000	$520,000,000
Barrels of oil produced	79,000,000	500,000,000
Cu. ft. gas produced	25,000,000,000	1,400,000,000,000
Value of gas sold	$4,000,000	$20,000,000

Three Lions

Section of the Devoli field, Albania, where an Italian Government company has drilled 445 wells in recent years. The sprinkling of heavy-duty rotaries is in sharp contrast to the wooden production derricks

Balkan Coups Revive Near East Threat

By J. P. O'DONNELL

NEW YORK, Mar. 11.—Concern over Near East oil felds, alleviated when Italian advance forces were driven from Egypt and eastern Libya in Africa and from Greece and southern Albania in Europe, has been revived as a result of Germany's further successes in its diplomatic invasion of the Balkans. German troops on Bulgaria's southeastern border are still more than 1,000 miles from Kirkuk, closest of the more important near eastern fields, but distance would be the only barrier to motorized divisions once they penetrated western Turkey, either by force or by diplomacy.

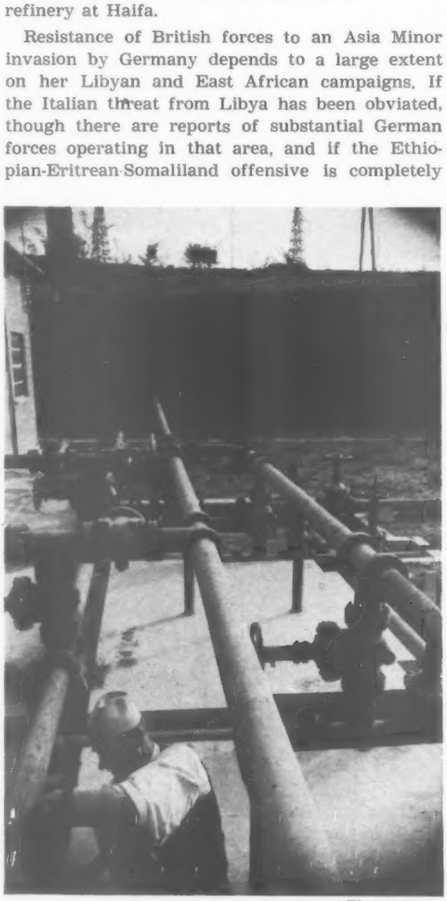
The gravity of London's concern over Balkan and Asia Minor possibilities was shown in the fact that General Nuri-as-Said, Iraq's foreign minister, arrived in Cairo last week to confer with Britain's foreign secretary, Anthony Eden. There was no official announcement of the theme of the conference but it undoubtedly concerned the increasing Nazi menace to Iraq's oil fields. According to reports reaching Ankara, German officers in the Balkans are openly boastful that they will seize Iraq fields.

Because of the great distances involved in a near eastern campaign, this threat to the oil fields and refineries in that area is still somewhat remote. If Germany does pursue it and is successful, the almost insurmountable problem of transportation still remains. The Kirkuk pipe line with its terminals at Haifa in Palestine and Tripoli in Syria offers the only northern transportation medium of consequence. This line, extending 575 miles from Kirkuk to Haifa with a 375-mile branch west of the Euphrates to Tripoli, would doubtless be destroyed if its loss was threatened.

The tanker route from Abadan, Iran, where one of the world's largest refineries processes crude gathered by pipe line from the Masjid-Sulaiman and Haft Kel fields in Iran, to Hamburg is 11,500 miles by way of Capetown. Shipments in the limited Axis tanker fleet would also have to contend with the British blockade. Acquisition of the Near East fields therefore would probably prove of little benefit to Germany unless a protracted war would permit the construction of transportation facilities. The loss of this supply, however, would be a blow to Britain and particularly to her Near East forces.

Another possible objective of a German drive through Asia Minor is Egypt's fields and refineries. Production in the Ras Ghareb field is reported to have increased substantially from prewar levels. This crude is refined principally at the Anglo-Egyptian Oilfields, Ltd., refinery at Suez, an important factor in supplying the British near eastern army and eastern Mediterranean fleet along with the Consolidated Refineries, Ltd., refinery at Haifa.

Resistance of British forces to an Asia Minor invasion by Germany depends to a large extent on her Libyan and East African campaigns. If the Italian threat from Libya has been obviated, though there are reports of substantial German forces operating in that area, and if the Ethiopian-Eritrean-Somaliland offensive is completely successful, an effective British force would be released for the defense of Iraq and the Persian Gulf oil region.



Three Lions

The manifold at the Devoli field end of the Albanian pipe line that is capable of moving 7000 bbl. of crude daily to the export terminal at Valona

An important factor in the Balkans is the ability of Greece to resist German diplomatic and possibly military pressure. Greece's counter-invasion of Albania has slowed down short of the oil fields and the Kucova-Valona pipe line and they remain in Italy's possession (The Oil and Gas Journal, December 5, 1940). Their present value is questionable, however, for Valona, Albanian oil shipping port, has been under frequent bombing as have the hydrogenation plants at Bari and Leghorn in Italy where heavy Albanian crude was processed. The Leghorn refinery was bombed last month when a British naval squadron shelled Genoa while aircraft-carrier planes attacked Leghorn. The Bari and Leghorn plants and the Naples refinery, shut down for lack of crude, are among Italy's most important. If Germany gains Thrace and the Dardanelles, a less dangerous route for shipping Rumanian oil from Constantza to Italy by way of the Aegean, Ionian and Adriatic seas will be opened.

Meanwhile Germany still appears dissatisfied with shipments from Rumania, a problem which Field Marshall Goering and Premier Ion Antonescu discussed at Vienna last week. Germany's goal of a minimum of 3,000,000 tons of Rumanian oil this year seems difficult of attainment. Last year Germany reportedly obtained only 1,450,000 tons and Italy but 340,000 tons. Italy has moved to improve deliveries by forming a Danube shipping company and letting contracts to Hungary for several river tankers.

Italy's Shortage Serious

Italy is now dependent on German synthetic products, according to reports. Her failure to provide herself with adequate fuel supplies before undertaking the war against Greece in the Balkans and against Britain in Africa has proved a severe penalty. German supplies are necessarily limited and as a result the Axis air offensive in the Mediterranean has been curtailed, functioning at best in the narrow Sicilian-Tunisian channel. Italian prisoners taken in Eritrea report a severe shortage of gasoline there, doubtless a large contributing factor to the remarkable successes attained by British armies in the Somaliland sector.

Russia's role as a supplier of oil to the Axis is regarded as a negligible one. An observer recently returned from Rumania reports that Russian supplies consist principally of lubricating oils which are delivered at Constantza, where ample storage exists, for transshipment by rail through Rumania and Poland to Germany. Russia's domestic requirements definitely limit exports. Russia and Rumania recently signed a pact calling for shipments of high-test gasoline to the U.S.S.R., an indication that Soviet supplies are not sufficient to provide an exportable surplus of consequence. While Russia claims to have exceeded planned production of more than 22,000,000 bbl. per month in January and February it is also reported in Pravda that a number of individuals have been indicted for wasting gasoline.

Bombardment of Rumanian oil objectives by the Royal Air Force has not yet begun but is anticipated momentarily, particularly if Germany moves against Greece. The Ploesti refining district, the Danube port of Giurgiu, Constantza and the transportation bottleneck formed by the Iron Gate are regarded as primary objectives of British air raids (The Oil and Gas Journal, February 6, 1941). Some observers hold the opinion that the British will refrain from bombing Rumania as long as Germany refrains from attacking Greece and that the inauguration of an anti-Greek offensive by the Nazis will precipitate bombing of Rumanian oil objectives.

Settlement of Antitrust Suit Under Consideration

By HENRY D. RALPH

WASHINGTON, D. C., Mar. 11.—Negotiations for a settlement of the antitrust suit against the American Petroleum Institute and 22 major oil companies and their subsidiaries and affiliates are under way at the Department of Justice and within 2 weeks it should be known whether the present basis of discussion will lead to a settlement by decree or whether the department will proceed with its plans to bring the case to trial.

Negotiations are being conducted by a committee of half a dozen attorneys for the major companies, headed by Harry T. Klein, vice president and general counsel of the Texas Co., and presumably they have at least tentative authority to speak for all the defendants in the civil suit filed in the District of Columbia September 30, 1940. The group met once with Thurman Arnold, assistant attorney general in charge of the antitrust division, and has since been negotiating with staff attorneys, particularly Mac Asbill, W. B. Watson Snyder, and Holmes Baldridge. Plans call for conferences all through next week with the view of reaching a final conclusion at that time.

A novel feature of the negotiations is that the majors' attorneys are attempting to devise a new mechanism for settling the case which will avoid a trial and yet not be a consent decree. Such a device, which might be called an injunctive decree, would be a new wrinkle in antitrust enforcement. Department officials are rather skeptical of the idea but are willing to discuss it. They would consider it a consent decree in everything but name, though they are willing to use a different name if desired by the defendants. At times the department has used the term "civil decree" where the parties involved felt that there was some stigma to a "consent decree."

Prefer a Middle Course

Apparently the major companies are willing to have the Government enjoin them from continuance of some of the trade practices attacked in the complaint, but they do not want to give the appearance of consenting to this voluntarily. Neither do they want to stand trial which might result in heavy civil penalties and a court order requiring even more drastic revision in their methods of conducting business. Attorneys not connected with the case in any way point out that it might be possible to steer a middle course by reaching an agreement in private conferences; the Department of Justice would submit this in open court as a proposed form of injunction; the defendants would be present but would neither contest it nor agree to it; the judge would sign the injunction and it would become effective. Technically this might not be a consent decree but it would have the same legal status because the defendants would have had an opportunity to protest but gave their consent through their silence. Without some such procedure a decree could not be effective because it would not have been based on due process of law.

While department officials freely admit that a settlement is being discussed they decline to reveal the nature of the plan offered by the majors, explaining that many suggestions are being offered for bargaining purposes and that action on one subject may depend upon the outcome of another phase of the negotiation so that there is no certainty as to any point until a complete settlement has been agreed upon. They do admit that the Government might accept less than is asked for in the omnibus bill of complaint provided the outcome gives substantially the economic relief desired. Among the chief points on which the department probably will insist are that the majors

HARRY T. KLEIN

Vice president and general counsel of the Texas Co., who heads committee of attorneys conducting negotiations in antitrust suit

stop giving themselves transportation rebates through dividends from pipe-line companies they own, that they stop making a price differential between exclusive dealing and split service-station contracts, and that they stop certain statistical services through the A.P.I. or otherwise and other practices leading to uniform prices, margins and marketing practices.

May Include New Concessions

The settlement might possibly include some new concessions by the majors not suggested in the bill of complaint, such as the idea of Mr. Arnold that many of the problems of independent refiners and marketers would be solved if all gasoline, or at least all regular motor gasoline, were sold under uniform government specifications which would make brand names and national advertising virtually meaningless.

One point of discussion is whether or not some of the defendants could make a settlement if one or two majors held out and insisted on going to trial. Department officials say this could be done and has been done in a number of cases, though usually the consent decree is subject to modification if the Government does not win its case against the holdouts and impose restrictions on them similar to those to which competitors consented. They appear to be very confident, however, that all the major companies will be in on the settlement if a settlement is reached, and one of them stated that it is his understanding that the committee of attorneys is speaking for all defendants.

Importance of Pipe-Line Suits

In addition to other factors which may be influencing the majors to discuss a settlement without trial is the fact that the department simultaneously filed test suits against three pipe lines owned by major companies charging violation of the Elkins Act in giving rebates to their user-owners in the form of stock dividends. Trial of these cases is being pressed and if successful they would be a precedent for divorcing all pipe lines from major-company control or for denying them the benefit of ownership which would have the same practical effect. The current negotiations concern settlement of these Elkins Act cases at the same time the A.P.I. case is settled. The pipeline cases thus become a lever to bring pressure on certain majors which might otherwise decide to fight the A.P.I. case through the courts. While the Department of Justice conceivably might agree to an out-of-court settlement of the A.P.I. case without reference to the pipe-line cases, it is understood that the major companies will not do so. If the A.P.I. case stood alone the defendants probably could stall off a settlement for a long time through preliminary motions and requests for extensions of time and they would not need to discuss a consent decree until the very eve of actual trial, or even during the trial.

The present national-defense emergency also enters the negotiations and is being used by the defendants as a plea for avoiding drastic reshuffling of the oil industry at this time. This situation might lead the department to accept settlement through an injunctive decree without the formal consent of the defendants since such a decree would be analogous to a temporary injunction which a court can issue for a limited period without the prior knowledge of the person against whom the injunction is issued. Some attorneys reason that the department could thus get part of what it asks for the duration of the emergency without prejudice to reopening the case at a later date.

The terms of settlement and the legal devices through which it might be accomplished are still in the realm of speculation and negotiation, but department officials freely admit that negotiations are in progress with reasonable expectation that a settlement may be agreed upon in the near future.

STATE CAPITALS...

CALIFORNIA

A. H. BELL AT THE SPRING MEETING of the Pacific Coast district of the American Petroleum Institute indicated that there was no relief in sight as far as curtailment is concerned due to the excessive potential although he admitted that the future appeared a little brighter due to the inability of prospectors to discover new prolific oil fields during the past 18 months. Mr. Bell, who is general drilling superintendent of Continental Oil Co. and chairman of the Conservation Committee of California Oil Producers, official curtailment group, is of the opinion that the curtailment committee will attempt to keep the oil industry on an even keel until later in the year as by that time a definite trend will have been developed.

A recent check of the probable demand picture for 1941 indicates the probability that the California oil industry will find it necessary to store at least 5,000,000 bbl. of refining crude oil during the remainder of the year with a good possibility of also having to store a similar amount of gasoline. A concerted attempt is being made to stimulate the production of heavy crude and shut in a similar amount of light refining crude in order to alleviate conditions but no definite program has been worked out. Several operators are cleaning out old wells in San Joaquin Valley fields especially in the Kern River, Coalinga and Midway-Sunset fields which produce a heavy grade of crude oil.

MICHIGAN

TO CLARIFY TITLE AND OWNERSHIP to royalty on a 345-acre tract in the Freeman-Clare oil field, Simrall Corp. of Mount Pleasant, Mich., as interpleader, has brought suit against Flora Coyne of Lake George and 92 others. Suit was filed in U. S. District Court at Bay City, by Simrall, which buys and transports crude oil. Litigation hinges on a so-called "hidden" undivided royalty clause in the original lease executed in 1937.

THE KNOX LAND BILL was defeated in the house by a decisive 59-to-25 vote last week. Its adoption had been vigorously opposed by conservation interests and the oil industry. The bill authorized the state to issue quit-claim deeds conveying fee title and all oil, gas and minerals on tax reverted lands when former owners met certain fees and penalties within a stipulated period. The bill specifically related to lands that reverted to the state for the years 1938, 1939 and 1940.

ARKANSAS

A GAS-CONSERVATION BILL has been introduced in the senate, proposing the formulation of the "Ouachita Valley Authority." Among other provisions governing improvement of navigation and flood control, the bill proposes to prevent waste of natural gas.

Utilization of natural gas as a fuel to generate electric power, in order to aid and protect commerce, strengthen the national defense, conserve gas, water, soil and forest resources, and to promote the general welfare of the state are the objectives.

Hearings were held last week before the senate conservation and oil and gas committees. Gas reserves of the Big Creek and McKamie fields of South Arkansas were cited as ample to operate a 60,000-kw. steam-electric plant for 100 years. The gas from both fields is sour, that from Big Creek containing 335 grains of hydrogen sulfide per 100 cu. ft. of gas, and that from McKamie, 4,500 grains. However, the gas can be successfully treated for removal of sulfur and carbon dioxide according to W. A. Delaney, of the Louisiana Nevada Transit Co. Mr. Delaney added that his company is prepared to build a treating plant which will process McKamie gas for its sulfur byproducts, sufficiently removing hydrogen sulfide from the gas to make it usable for steam generation of electric power.

TEXAS

A STATE-WIDE PRORATION hearing has been called at Austin for March 17 by the Railroad Commission to receive evidence on which to base a proration order for April. New rules for four fields and notices of hearings for 10 others were announced last week.

A spacing pattern of 660 ft. between wells and 330 ft. from property lines was ordered for the Bowers field, Montague County. A 40-acre pattern is optional. Minimum spacing of 440 ft. between wells and 220 ft. from lease lines was ordered in the Killam field, Webb County, while a 300 and 150-ft. program was prescribed in the Charco Redondo field, Zapata County.

Rules for the Agua Dulce field, Nueces County, require wells to be drilled 933 ft. from other wells and 466 ft. from property lines with allowables based 25 per cent on wells and 75 per cent on acreage. The March calendar of hearings follows:

March 20.—For increased allowable asked in the Minnie Bock field, Nueces County.

March 21.—For new pool allowable asked by Anzac Oil Corp. for its 1 Sealy-Smith, Overall pool, Coleman County; for dual completion on Tide Water Associated 2-C N. N. Wills, Thomas Bristow Survey, Cayuga field, Anderson County; for Tide Water 4 W. D. Johnson, Sections 28-34, H.&T.C. Survey, Ward County; for shutdown exemption asked for C. M. C. Oil Co.'s State of Texas lease, South Seven Sisters field, Duval County.

March 22.—For rules in the Shield field, Nueces County.

March 24.—For increased allowables asked in the Flag Lake pool, Henderson County; for amendment of rules in McCamey field, Upton County; for amendment of rules for Hull-Silk (Caddo lime), Archer County.

March 27.—Rules for recycling plants in Stratton field, Nueces County, postponed from March 12; rules for recycling plants in Agua Dulce, also postponed from March 12.

THE SENATE COMMITTEE on oil, gas and conservation has given a favorable report on a house bill extending Texas oil and gas proration laws 2 years from September 1 1941, and continuing the state's participation in the Interstate Oil Compact Commission for a similar period.

FIRST COURT ATTACK on the March 10 proration order was to have been heard Wednesday. Hamman Exploration Co. of Houston, Tex., alleged in its petition that the new order cuts production of the 18 wells in the Hamman field, Brazoria County, to 41 per cent of their former allowable and that such a deep reduction will kill the production.

ASKS NEW COMMISSION . . .

R. H. FOSTER, executive vice president of Landreth Production Co., Fort Worth, Tex., used figures showing spectacular expansion of the oil industry in Texas as his chief argument for a bill, favorably reported out of committee last week, that would create a separate oil and gas regulatory body in that state

LOUISIANA

A STATE-WIDE HEARING will be held at the Monteleone Hotel, New Orleans, La., March 19 at 10 a.m. for the purpose of taking evidence relative to market demand from producers and purchasers of crude oil and natural gas preparatory to setting oil and gas-well and field allowables for the 61-day period of April and May.

All purchasers of crude and natural gas have been instructed to present evidence at the hearing, or file notarized briefs by registered mail setting out their nominations, in triplicate, for the next 2 months.

INDIANA

APPOINTMENT OF A GROUP to study and survey the oil pipe lines in this state and make recommendations for possible legislation for the next general assembly is urged in a new resolution. The investigation would be made by a five-member committee from the house.

KANSAS

POTENTIAL-PRODUCTION TESTS are to be taken by the Corporation Commission on all oil wells in 15 Russell County fields beginning March 15. Fields are: Anschutz, Coralena Arbuckle, Coralena Dodge, Dubuque, Eichman, North Fairfield, Arbuckle, Hall-Gurney-Gorham, Hall-Gurney-pre-Cambrian, Hall-Gurney-Topeka, Karst, Sellens, West Trapp, Vaughn-Arbuckle and Vaughn-Gorham.

MINNESOTA

ACTION IS SCHEDULED this week in the senate on a bill that would levy a 5 per cent gross-earnings tax on pipe lines bringing fuel oil and gasoline into the state. At a hearing last week Harry Moreland, Kansas City, Mo., vice president and general manager of Great Lakes Pipe Line Co., testified in opposition to the bill. He said the proposed tax probably would "put pipe lines in Minnesota out of business."

Passage of the bill, he predicted, would result in pipe-line companies completing delivery at the boundary with subsequent distribution dependent on trucks. The hearing was continued to give Mr. Moreland time for gathering figures showing valuation of pipe-line properties in the state and net income since 1933 from Minnesota operations.

the OIL AND GAS JOURNAL

PRODUCING REFINING NATURAL GASOLINE PIPE LINE

Published weekly by The Petroleum Publishing Company at Tulsa, Oklahoma

Consider the Annual Statements

The annual statements of the integrated oil companies now being released covering 1940 operations should be studied by every operator, large and small.

There are no better reflectors of causes and effects applying to all divisions of the industry's operations than these financial summaries. They measure accurately the year's activities in terms of profits and losses, the final test of any business.

Collectively, these reports are a gage of the entire industry's accomplishments over a 12-month period. They reveal the results of healthy operating practices and at the same time they debunk any claims made for unsound methods offered the industry from year to year.

Among those companies whose operations extend from the drilling rig to the filling station there was a striking similarity in the results obtained in last year's operations. Generally, the first quarter and the half year's profits showed substantial recovery over the same periods in 1939 and 1938 and one of the best years of the past decade was in prospect at that time.

By early spring, danger signals were apparent and in another 90 days they were well defined. Prices for some of the finished products which started the year at satisfactory levels began to crumble. Excessive crude-oil production and refinery operations were the direct explanation of these unwanted trends.

The most outstanding and important of the price reverses applied to gasoline. For most companies the decline in earnings paralleled the steady downward adjustments in gasoline quotations.

One company reported that the wholesale return on a barrel of crude oil refined at its plants decreased 48 cents from January to September with a still greater decline based on retail quotations. Several companies found at the end of the year that they had sold gasoline at the lowest average prices in their entire corporate history.

In some cases the returns on one or more of the plant products were higher than the previous year. But this was of little avail in the face of a steady decline in the principal product which by the end of the year in many markets had dropped to the lowest point since gasoline ceased to be a waste product of refinery operations.

These post mortem reports obviously are of value principally as a guide to the operations of succeeding years. In this case it is necessary to keep in mind that this year's operations started on the unsatisfactory basis that ended 1940's. With the first 3 months drawing to a close there will be no highly profitable first quarter to serve as a backlog for the remainder of the year.

History reveals that the industry's best years generally have come when it got away to a slow start and increased its momentum as conditions justified later in the year. It has the opportunity to do just that this year.

The immediate objective should be to correct those conditions in refinery markets which are not justified in relation to posted crude-oil schedules and costs of manufacture and distribution. This can only be accomplished through the cooperation of the entire industry.

The industry's statistical position today has weaknesses but it is essentially better than it was a year ago. There is no rapidly mounting and uncontrolled production in one area. The worst in declining exports has been experienced. A 10 per cent gain in domestic gasoline consumption appears assured.

The trouble in the past has been that many operators have insisted on trying to get tomorrow's rewards today; they have been too quick on the trigger. A liberal dissemination of 1940 annual statements within the industry and among the state proration bodies should aid in controlling this impulse.

Pipe-Line Bill Defeated By Georgia Legislature

SINCE the Georgia Legislature last week voted down the pipe-line right-of-way bill, it appears that there is no prospect of gasoline-pipe-line construction within the state in the near future unless the federal Government intervenes.

The bill was defeated March 5 by a vote of 107 to 83. Shortly afterward, a motion to reconsider the bill was voted down by 95 to 83. The bill, designated as H.B. 41, was drawn up to correct a defect in a statute intended to give the right of eminent domain to common-carrier pipe lines. The next scheduled meeting of the legislature is to be held in January 1943.

A bill has been passed, but not signed by the governor, which provides for the creation of a special session. To put this into effect will require a constitutional amendment which must be approved by a referendum. The passage of this special-session bill has not been connected with efforts of pipe-line interests to obtain right of eminent domain. Under the present state constitution, the governor is empowered to call an extraordinary session of the legislature; under existing circumstances it is unlikely that he will do this.

Because of the military importance of gasoline pipe lines in southeastern states there is reason to believe the U. S. Government may find it advisable to intervene in order to clear the way for major pipe-line projects which have been delayed. However, under existing laws the federal Government has no right to interfere in this situation. Southeastern Pipe Line Co. has been prevented from completing the 450-mile gasoline line from the Florida Gulf Coast to the Tennessee State line near Chattanooga. At present only 96 miles of the line is in operation; this section is between Port St. Joe, Fla., and Bainbridge, Ga. Plantation Pipe Line Co. (Standard Oil of New Jersey and Shell) is considering plans for a gasoline line from Baton Rouge, La., to Portsmouth, Va., crossing the Southeastern Pipe Line Co.'s line near Atlanta, Ga.

The importance of gasoline pipe lines in Georgia as a national-defense measure had been emphasized by a statement made by Secretary Knox in Washington the day the legislature voted on the right-of-way bill. In order to clarify a confused impression in the minds of legislators who thought that President Roosevelt was not concerned about the completion of Southeastern Pipe Line, the president had Secretary Ickes issue a statement that the administration is opposed to the obstruction of this important project.

Opposition to the pipe-line right-of-way bill was due to the organized efforts of railroad interests and railroad unions. Construction of Southeastern Pipe Line, legal aspects of the project and obstructive tactics on the part of railroads have been discussed in articles in The Oil and Gas Journal: "Legal Aspects of Southeastern Pipe-Line Project," March 14, 1940, p. 53; "Southeastern Pipe Line Co. Building Florida-Georgia Gasoline Line," April 25, 1940, p. 54; "Southeastern Pipe Line Faces Obstructive Tactics in Georgia," October 31, 1940, p. 29.

Expressing the indignation of a large section of the Georgia population which disapproves of obstruction to progress, the Atlanta Journal published an editorial, entitled "A Sad Disservice to Georgia," which asks whether it is democratic to deny right-of-way to a modern transportation system seeking permission to cross transportation facilities which are already established. Regret is expressed for the demagogic abuse of the pipe-line interests. Action of the legislature is referred to as a rebuff to the principles of the state which stand for fair play and wholesome competition as well as cooperation for national defense. The majority defeating the bill was not large.

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Gulf Coast Drilling Contractors Hold Meeting in Houston

HOUSTON, Tex.—A movement to establish a Gulf Coast chapter of the American Association of Oil Well Drilling Contractors was started in Houston, Tex., March 6, when approximately 50 oil men and drilling contractors in the Gulf Coast district assembled at the Lamar Hotel to hear an address by J. Brantly, president of the association.

The association was organized in Chicago November 1940 and the meeting at Houston was the third to be held since the association was organized. Other meetings were recently held at Bakersfield, Calif., and at Dallas, Tex. Mr. Brantly told the group of the activities and objectives of the association, stressed the need of cooperation among the drilling contractors, and discussed the Bakersfield and Dallas meetings.

Mr. Brantly said the drilling contractors are about the only section of the oil industry that is not organized. The association was formed, Mr. Brantly said, to promote the best interests of the petroleum industry in all of its branches as they may be affected by the oil-well-drilling industry generally, and by oil-well-drilling contracting specifically; to afford a convenient means of ready cooperation with the national and state governments in all matters relating to the oil-well-drilling industry which are of interstate and intrastate concern; to afford a ready means of cooperation within the oil-well-drilling contracting industry generally for the purpose of improving the status of those employed in the industry; to afford means for cooperative study of oil-well-drilling equipment, and to improve the relationships between the producing companies and the contracting firms.

The national association is divided into regions. They are Pacific Coast, Permian basin, North Central Texas, Central Mid-Continent basin, Cretaceous basin, northern Louisiana, Arkansas and Mississippi, Gulf Coast, North Central Paleozoic basin, Appalachian region and the Rocky Mountain region.

Officers of the association other than Mr. Brantly include Harry L. Edwards, Houston, vice president at large; Warren S. Churchill, Tulsa, vice president of rotary drilling; John S. Klise, Wooster, Ohio, vice president for cable tools, and C. J. Paine, Dallas, secretary and treasurer.

Harry L. Edwards and Arch Rowan of Houston are members of the executive committee and are directors at large. Directors of the Gulf Coast region are A. T. McDannald, Houston, and E. B. Rubsamen, San Antonio. The nominating committee for the Gulf Coast was to be appointed the first of the week.

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Cole Subcommittee Scheduled To Resume Hearing

WASHINGTON, D. C., Mar. 11.—The Cole subcommittee is scheduled to start its final series of hearings in Washington March 25 preparatory to making definite recommendations to Congress on oil-conservation.

Three cabinet members are tentatively slated for the first testimony. They are Harold L. Ickes, Secretary of the Interior; Col. Frank Knox, Secretary of the Navy, and Henry L. Stimson, Secretary of War.

Spokesmen for various branches of the oil industry, the Interstate Oil Compact Commission and representatives of the Office of Production Management will be heard after the cabinet members.

Postpone Trial in Treble-Damage Suit Against Oil Firms

MADISON, Wis., Mar. 11.—Trial of the treble-damage suit brought by Northwestern Oil Co., Superior, Wis., against Socony-Vacuum Oil Co., Inc., and other oil firms has been postponed by Federal Judge Patrick C. Stone until March 31. The suit is an effort to collect alleged damages incurred by the plaintiff as a result of conditions of trade when the oil industry was operating under the N.R.A.

THE MARKETS*

CRUDE OIL: Markets for practically all crude oil are steady to strong. An advance of 5 cents per barrel was posted March 1 by Ohio Oil Co. on crude in the Oregon Basin field in Wyoming lifting the flat price there to 45 cents. A flat posting of 70 cents for crude in Yoakum, Gaines, Cochran, and Hockley counties, Texas, was made last week by Cosden Petroleum Corp. of Big Spring, Tex., meeting a policy previously announced for Cochran and Hockley by the Texas Co.

REFINERY: Gasoline prices have been advanced another ¼ cent per gallon on the Gulf Coast and East Coast suppliers have lifted their terminal quotations 0.3 cent per gallon. Inland markets are strong and several suppliers are asking ⅛ cent more for low-octane motor fuel. Distillate fuels are turning soft while residuals hold their strong position.

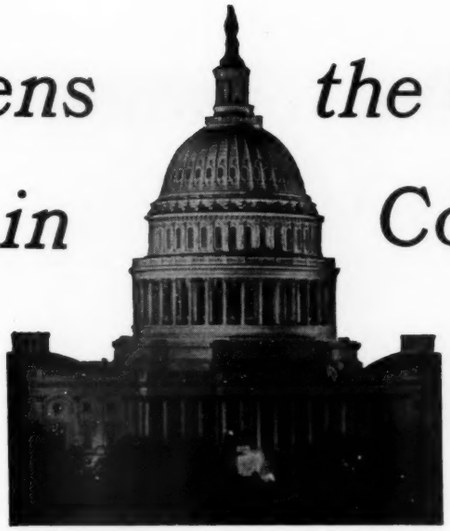
Pennsylvania refineries Tuesday increased their quotations ½ cent per gallon on cylinder stocks and raised low-pour neutrals 1 cent per gallon.

TANK-WAGON AND POSTED-DEALER: Scattered adjustments to meet local conditions were reported from several parts of the country but none had regional significance.

FINANCIAL: Oil securities traded over a narrow range. Average of 30 representative stocks for the week ended March 8: High, 22.38; low, 21.73; close, 22.14. Week ended March 1: High, 22.35; low, 21.82; close, 22.04.

*Detailed information in the Market Section.

Author Likens the Oil Industry To Utility in Control Plea



By HENRY D. RALPH

WASHINGTON, D. C., Mar. 10. — Government control of the oil industry as a public utility is suggested in a monograph submitted to the Temporary National Economic Committee by the Department of Justice.

The study, entitled "Control of the Petroleum Industry by Major Oil Companies," was prepared by Roy C. Cook, of the staff of the antitrust division, in his individual capacity and was submitted as such with a foreword by Asst. Atty. Gen. Thurman Arnold stating that the facts, opinions and conclusions are not to be considered as those of the department. However, it may be significant that Mr. Cook was one of the department men who sat through all the T.N.E.C. oil hearings, and he has worked closely with Hugh B. Cox, W. B. Watson Snyder, and other department attorneys in charge of oil investigations and court cases.

The booklet does not elaborate on the suggestion for control. The author simply concludes with the statement:

"In many respects the characteristics of the petroleum industry resemble those of a public utility, and because of the public interest involved in the problems of the consumer and national defense, it is conceivable that the continuance of present practices and conditions may lead to regulation of the industry by the state and federal governments on public-utility principles."

The monograph is largely a summary of the material presented to the T.N.E.C. oil hearings, supplemented by other published material; that is, a summary of such material that shows the ways and extent that the major companies dominate the industry. There is a striking resemblance between Mr. Cook's findings and the charges made by the Department of Justice in its pending equity suit against the American Petroleum Institute and 22 major companies. The author states that the analysis is devoted primarily to the controls which the major oil companies exert over independent, nonintegrated oil companies. He states that control of the industry by the majors appears to be just as complete today as was the case of the Standard Oil Trust under Rockefeller, though the methods of control are somewhat different today. In his preface, Mr. Cook says:

"Even though the 20 major oil companies are separate corporate entities, there is definite evidence of cooperation among them and uniform concerted action by the adoption of identical business policies which has the effect of group monopoly. The American Petroleum Institute through its various committees makes their policy toward group monopoly more effective. The position of the independent oil companies has gradually become weaker during the past 10 or 15 years, so that the opportunity for independent capital today is not at all promising, despite the continued and progressive growth of the petroleum industry. The advantages of full integration which the majors enjoy and their virtual control over transportation facilities give them distinct competitive advantages.

"Although state and federal programs have been adopted to prorate and regulate crude-oil production in the name of conservation, the price considerations used in proration have usually favored the majors rather than the independents."

After a brief description of the industry, the monograph discusses the extent of major control over production, crude-oil transportation, refining, gasoline transportation, and marketing.

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Bill Would Impose Severe Restrictions on Pollution

A NEW measure to prevent the oil and other industries from discharging waste material of any kind into any stream has been introduced by Rep. Karl E. Mundt of South Dakota, leader of the forces which for several years have been seeking drastic antipollution legislation.

While less drastic than the bill sponsored by Mr. Mundt in the last Congress, it still carries severe restrictions and proposes detailed regulation of stream sanitation. Apparently it is offered as a compromise with congressional forces seeking a more moderate type of pollution legislation, and will be pressed in an attempt to break the deadlock in Congress which has prevented passage of any legislation on the subject.

The general pattern of the bill is similar to previous proposals. It would create a division of water-pollution control in the United States Public Health Service, encourage state and local cooperation in reducing pollution, authorize interstate compacts to control pollution in watersheds, and authorize the Reconstruction Finance Corp. to make loans to cities for installing sewage-treatment works.

Industry would be affected directly by a provision directing the new division to prepare plans for reducing pollution of navigable streams and their tributaries, and to fix standards of purity for various streams, establish minimum requirements for the treatment of waste material, and promulgate regulations governing the discharge of any material into a stream. Such regulations would go into effect 2 years after passage of the act, but the division could grant an extension up to 5 years to permit an industry to perfect adequate means of disposal of waste material; but the burden of proof would be on the industry to show that no adequate treatment means are known.

The most drastic portion of the new bill is a provision declaring it a public nuisance to permit the discharge of any material, whether in a solid, liquid, or gaseous state, which might pollute a stream. Any United States district attorney could seek an injunction to stop such pollution if in violation of Public Health Service regulations upon the request of the P.H.S. or a local sanitary water district. However, an injunction would not be brought until local enforcement agencies had been given 6 months to correct the pollution.

One saving clause provides that the act will not apply to industrial pollution during the present emergency in cases where the secretary of war or secretary of the navy certifies that enforcement of the act against a certain industry is incompatible wtih expeditious progress of the national-defense program.

●

Export-License Control Adds Additional Petroleum Products

LICENSES are required for the exportation of petroleum coke and carbon black and gas black, effective March 10, under an executive order issued by the president last week. Applications must be made to the Division of Controls of the Department of State and licenses must accompany export documents before collectors of customs will clear shipments.

In another proclamation effective April 15 the president required a license for the exportation of plans for producing any article now or hereafter on the export-license-control list. The proclamation covers the following:

"Any model, design, document, or other article or material, containing a plan, specification, or descriptive or technical information of any kind (other than that appearing generally in a form available to the public) which can be used or adapted for use in connection with any process, synthesis, or operation in the production, manufacture, or reconstruction of any of the articles or materials the exportation of which is prohibited or curtailed in accordance with the provisions of Section 6 of the act of Congress approved July 2, 1940, or of any basis or intermediary constituent of any such articles or materials."

Previously licenses have been required for the exportation of equipment for making aviation lubricating oil and for both equipment and plans for equipment for making aviation gasoline and tetraethyl lead. The new proclamation provides that licenses for the export of plans of any kind will be handled by the administrator of export control, while the State Department will continue to handle licenses for export of equipment and of commodities themselves.

A new regulation was issued by the State Department covering the types of steel drums and containers which may not be exported, filled or unfilled, without a license. Previously no license was required for drums of between 5 and 30-gal. capacity unless containing or clearly intended to contain gasoline or lubricating oil. Now a license is required if the drums contain or are intended to contain gasoline, lubricating oil, crude oil, fuel oil, diesel oil, gas oil, or petroleum jelly, including petrolatum of low grade to be used as lubricant or to prevent rust.

E. W. WEBB T. H. ACRES R. N. McMASTER

Presiding officers at the three technical sessions at Los Angeles this week

Six Papers Presented at Los Angeles A.P.I. Meet

By L. P. STOCKMAN

LOS ANGELES, Calif., Mar. 11.—With attendance on about a par with last year for the morning and afternoon sessions, the program committee of the Pacific Coast district, Division of Production of the American Petroleum Institute, presented six papers covering a wide diversity of topics. Considerable attention was given to the development of new equipment, some of which has not yet been used in California fields. This included detailed descriptions and slides showing construction and operation of an electrical-heating process for removing paraffin accumulations in the tubing of wells; a perforation washer that enables the operator to check each individual shot hole or ring of perforations around the pipe regardless of the vertical distance between perforation centers and to apply hydrostatic pressure of sufficient force to open those which are clogged, and a well-cleaning process in which oil is driven through the clogged perforations of the liner by forces released from an exploding torpedo, together wth a detailed explanation of the use and application of a combination gun perforator and testing tool that allows the operator to perforate and test a well in a single operation. The gun tester, which is a combination of three well-known service tools and which results in a considerable saving of time as well as keeping the mud column from contaminating the formation, has been used with considerable success in the Gulf Coast area but has not yet been used commercially in California.

E. W. Webb, of Continental Oil Co. and chairman of California topical committee on drilling practice, presided at the morning session, and T. H. Acres, of Richfield Oil Co. and chairman of the California topical committee on production practice, presided at the afternoon session. R. N. McMaster, of Chanslor Canfield-Midway Oil Co. and chairman of the Pacific Coast district, Division of Production, American Petroleum Institute, was chairman of the evening session which climaxed the technical sessions with a dinner in the Biltmore Bowl. Mr. McMaster subsequently turned over the introductions to Prof. Robert D. Gray, of California Institute of Technology, who introduced the guest speaker, Arthur H. Young, who discussed industrial relations. Mr. Young is well qualified to discuss the subject in question as he entered the personnel field through his interest in the development of safety programs in the Illnois Steel Co. and in the United States arsenals and navy yards during the last World War. He was manager of industrial relations of the International Harvester Co. from 1918 to 1924 and was director of Industrial Relations Councillors, Inc., from 1924 to 1934. He was vice president in charge of industrial relations for United States Steel Corp. from 1934 to 1937 at which time he retired from active work. His retirement in California consists of being president of the Chemical Industries of California and visiting lecturer in industrial relations at the California Institute of Technology. Mr. Young was very active in the organization of the industrial-relations section at Cal Tech. This interesting discussion was very appropriate as previously, in the day session, W. L. Bagby of Shell Oil Co., Inc., had outlined the results of vocational training in California. He indicated that 27,512 persons employed in the petroleum industry have availed themselves of vocational training in California since its inception and that evidence clearly points to the need for continued support on the part of the industry as an incentive to greater impetus for progress and efficiency. There were 922 members of the A.P.I. and friends present at the evening banquet.

Following are abstracts of the technical papers that were presented at the meeting. A paper, "Recently Developed Methods for the Inspection of Tubular Goods and Sucker Rods," by H. M. Henderson, Standard Oil Co., La Habra, Calif., will be published in full in next week's issue of The Oil and Gas Journal.

W. L. BAGBY BENTON TURNER NORRIS JOHNSTON

Three of the authors who presented technical papers at Pacific Coast meeting

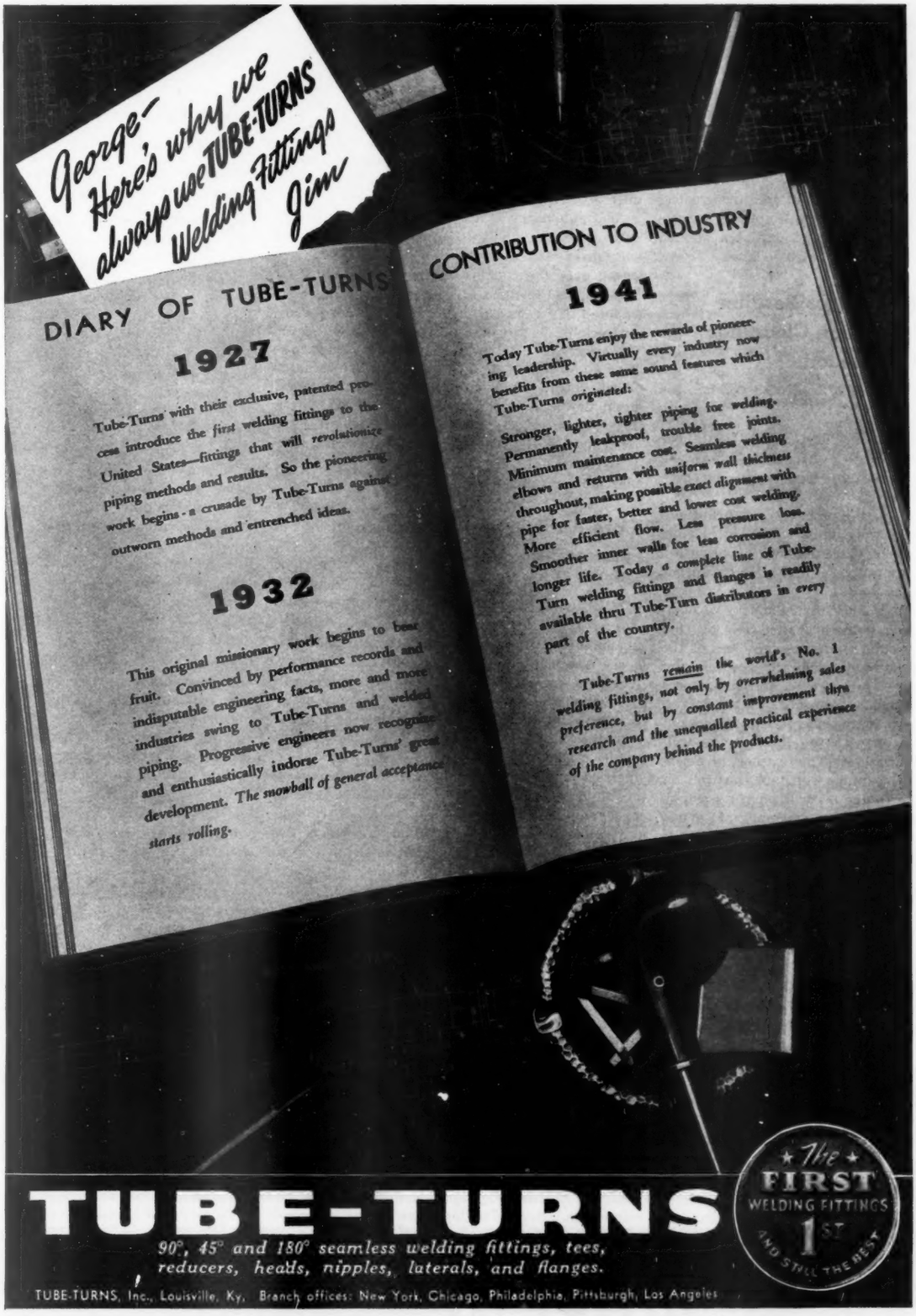
A. P. I. Abstracts

Voluntary Curtailment Program Of California Oil Producers

A. H. BELL (Continental Oil Co., Los Angeles, Calif., and chairman, Conservation Committee of California Oil Producers)

THE author has attempted to make this paper primarily suitable as a reference for the history of curtailment and the formula now in use. As an introduction the paper covers fundamental reasons for overproduction and the necessity of curtailment as a conservation measure. The history of voluntary curtailment in California from 1922 to the present is covered in detail and is followed by a full description of the curtailment organization as now constituted. This is followed by a complete description of the formula now in use in California for arriving at well allowables. Throughout the period since 1929, constant progress has been made in organization procedure, administrative procedure and scientific construction of formulas and determination of potentials. There has been gradual establishment of precedent and public opinion to insure cooperation on the part of 1,125 operators in the state who today are curtailing a potential production of 3,449,000 bbl. per day down to 601,745 bbl. daily. It is only while the average producer has confidence in the equity of allotments recommended by the committee that such voluntary cooperative spirit as has been shown is possible.

In applying the minimum allotment formula, the rule provides that no well able to produce it shall be allotted less than 10 bbl. per day and this is called the irreducible minimum. The mathematical application of the minimum formula is therefore limited to wells greater than 1,850 ft. in depth which is the depth under the present formula


George—
Here's why we
always use TUBE-TURNS
Welding Fittings
Jim
DIARY OF TUBE-TURNS
1927
Tube-Turns with their exclusive, patented process introduce the first welding fittings to the United States—fittings that will revolutionize piping methods and results. So the pioneering work begins - a crusade by Tube-Turns against outworn methods and entrenched ideas.
1932
This original missionary work begins to bear fruit. Convinced by performance records and indisputable engineering facts, more and more industries swing to Tube-Turns and welded piping. Progressive engineers now recognize and enthusiastically indorse Tube-Turns' great development. The snowball of general acceptance starts rolling.
CONTRIBUTION TO INDUSTRY
1941
Today Tube-Turns enjoy the rewards of pioneering leadership. Virtually every industry now benefits from these same sound features which Tube-Turns originated:
Stronger, lighter, tighter piping for welding. Permanently leakproof, trouble free joints. Minimum maintenance cost. Seamless welding elbows and returns with uniform wall thickness throughout, making possible exact alignment with pipe for faster, better and lower cost welding. More efficient flow. Less pressure loss. Smoother inner walls for less corrosion and longer life. Today a complete line of Tube-Turn welding fittings and flanges is readily available thru Tube-Turn distributors in every part of the country.
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at which a well earns a 10-bbl. minimum allotment. The second step in the formula is commonly known as the sliding-scale-percentage curtailment, namely that percentage of curtailment applied to the potential remaining after deducting the aggregate minimum allotment. This graduated percentage of remaining potential to determine the remaining allotment is applied to all intermediate wells, which may be classified as wells which are neither marginal nor top. The principle which is applied in allocating production to oil wells on this basis is similar to the income-tax method wherein those with the largest income are best able to bear the burden. Similarly those wells with the largest potentials are able to take the greatest percentage of curtailment. This is entirely an economic consideration to which have been applied engineering and mathematical principles.

Recent Equipment for Paraffin Removal, Perforation Cleaning And Well Completion

BENTON TURNER (Drilling & Exploration Co., Inc., Los Angeles, Calif.)

FOUR new tools have been selected as those which offer the greatest promise of improving production technique and reducing operating costs. They are as follows:

1. An electrical heating process for intermittently removing paraffin accumulations from the tubing of pumping wells. (This method was discussed in detail beginning on p. 35 of the March 6 issue of The Oil and Gas Journal.)

2. A perforation washer that enables the operator to check each individual shot hole or ring of perforations around the pipe regardless of the vertical distance between perforation centers and apply a hydrostatic pressure of sufficient force to open those which are clogged. Further it offers a method of injecting chemical that has not been hitherto mixed with the fluid in the well through the perforations. The washer is essentially a reciprocating pump run into the well on the bottom of the tubing or drill pipe. Its principal parts consist of (*a*) pump assembly, (*b*) drive-down spear, and (*c*) packer assembly. The packer assembly and pump are connected by a hollow piston rod that allows the fluid to pass from the working barrel of the pump through the piston rod and out between the packer rubbers which isolate the perforations for testing and washing. The packer assembly travels down the hole a distance equal to the stroke of the piston. It is this unique feature which permits the operator to set the packer rubbers any required distance apart so that each ring of slots or shot holes may be individually tested.

3. A well-cleaning process in which oil is driven through the clogged perforations of the liner by the forces released from an exploding torpedo.

4. A combination gun perforator and testing tool that allows the operator to perforate and test the well in a single operation.

The intent of the gas-torpedo well-cleaning process is to deliver without damage to the perforated liner in the well a low-velocity concussion wave of sufficient force to clean the liner perforations and flush the surrounding formation. To generate this force a torpedo filled with an explosive mixture of compounded gases is lowered into the well on the sand line. When opposite the perforated section to be cleaned, the torpedo is detonated by means of a go-devil dropped from the surface and securely mounted around the sand line. Electric firing has not yet been used to fire the torpedo although its use has been under discussion for some time. In Texas the torpedo has been run on both the tubing and the sand line. Most runs are now made on the sand line. The velocity of the concussion wave set up by the explosion of the gas torpedo is estimated at approximately 150 ft. per second. It is also estimated that in certain Texas fields the maximum radial penetration of this wave approaches 200 ft. Well-authenticated facts on these reports are not available. However, it has been reasonably shown in several instances that the concussion wave is of sufficiently low velocity so as not to be destructive to the liner. It has been estimated that the heat generated by the explosion of the gas torpedo is not sufficient to glaze the surrounding oil sand as is sometimes the case when charges of nitroglycerin are detonated in the hole.

The gun tester is a combination of three well-known service tools. It offers the following advantages: (1) A considerable amount of time is saved over the conventional method of gun perforating and testing; (2) the perforations are not exposed to the weight of the mud column for any appreciable length of time before testing. So far, 91 successful jobs in the Gulf Coast area have been completed with the gun tester. A maximum of 90 shots has been fired on one test. The maximum depth to which the tool has been run is 10,060 ft. and to date no fishing jobs have resulted from its use. However, in spite of this rather impressive record, the tool has yet to be used commercially in California.

Core-Analysis Interpretation

NORRIS JOHNSTON (General Petroleum Corp., Vernon, Calif.)

CORE analysis is an attempt to find the amount of space in a subsurface reservoir that is available for oil and gas and how much of this space is actually occupied by oil and gas and how much by water; how rapidly the oil and gas will be available and also how much of it may be recoverable by various means and how best to design those means of recovery. It will be evident to the critical reader that the broad use of core-analysis data involves many assumptions regarding fluid content and movement in the reservoir. A section has, therefore, been added discussing the present state of knowledge on which the necessary assumptions must be based and what must be done to improve that state of knowledge.

Vocational Training in Oil and Gas Production

W. L. BAGBY (Shell Oil Co., Inc., Ventura, Calif.)

VOCATIONAL training has been insufficiently elastic to meet the rapid technologic advance taking place in the petroleum industry — a situation aggravated by curtailed personnel resultant of current economic conditions. The history of vocational training in California for the production phase of the industry begins during the early stages of oil development with evening classes in secondary schools offering essentially basic courses in elementary science, mathematics and other phases of the industry. Subsequently, to meet the technologic advance taking place in the industry, courses in petroleum engineering were designed by the universities and ultimately there came a demand for highly specialized training to meet the high degree of specialization taking place.

To meet the urgent need for basic training, courses have been organized and successfully conducted in California vocational schools during the past 2 years in a number of subjects directly and indirectly related to the petroleum industry. A total of 27,512 employed in the petroleum industry have availed themselves of vocational training in California since inception. Absence of statistics regarding the enrollees' subsequent welfare precludes precise judgment as to the efficiency of the program. However, the interest shown and advancement of men so trained gives incontrovertible testimony to its success. Much credit is due to A.P.I. subcommittee for topical vocational training which in the main has shouldered the industry's responsibility.

Some Factors Which Influence the Choice of Drilling Equipment

VICTOR J. BEISSINGER (Richfield Oil Corp., Los Angeles, Calif.)

RATHER than attempt a detailed survey of all the factors which might influence the selection of individual units of drilling equipment, this paper is concerned primarily with an exposition of the major factors which govern the choice of whole drilling units. The mechanics and economy of drilling operations are affected by such factors as program, power, and cost. Fundamentally, cost relationships and effects are truly realistic, and the most advantageous choice of drilling equipment may be substantiated by the cost of its ultimate performance. In order to obtain conclusive regional expression for the most basic cost determinations, the writer has suggested what he believes to be a practical scheme to pool individual-company drilling-experience records. Only by such a coordination of effort can the industry secure full information in the light of full perspective. This paper stipulates the nature and importance of the factors which influence the choice of drilling equipment, but the relative weight of these criteria must be determined by much more detailed investigation.

Efforts to streamline the choice of drilling equipment most effectively can obtain both mechanical and economic significance by the pooling of drilling-performance information. Regional as well as local drilling factors could be set up for general industry use, so that the consideration of drilling equipment would be on a basis similar in scope to the design of casing strings and the application of areal production formulas. Variations in drilling programs, as well as differences in power-plant and equipment-power-consumption economies, could be cataloged on the basis of oil-industry experience to the extent that the choice of drilling equipment would be facilitated by an inspection of well-correlated reliable facts and figures. Because the cost of drilling equipment is the ultimate measure of its utility value, the most direct approach to the proposition of selection is along some line of comparable standards of value. A measure of useful life in terms analogous to the work performed has been suggested. Until the industry accepts some such standards as indicative factors of use and performance, there will not be a sufficiently common reference base for any practical consideration of useful selection.

Four general conclusions as noteworthy memoranda pertinent to the choice of drilling equipment are pointed out. These are: (1) There need be no specific distinction between development and wildcat drilling outfits; (2) the use of combination dual-power rotary rigs may be anticipated for the most convenient handling of widely variant drilling jobs; (3) cost data resolved on the basis of indicated work accumulation can be used to estimate the probable future worth of drilling-equipment purchases; (4) the purchase of drilling equipment can be justified economically only over a considerable period of active use. Drilling-department organizations of so-called integrated companies might secure such an economy by following the pattern of contractors.

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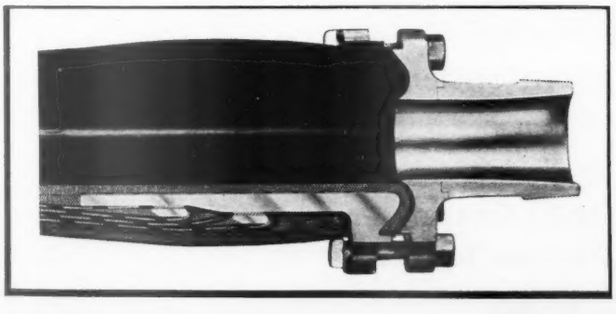

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When shipments keep so close to plant production that storage is but a little above suction on the pumps, down-time becomes a major issue in operation — REFINER AND NATURAL GASOLINE MANUFACTURER, February, 1941 issue

That story is about a Dubbscracking refinery in California and about the notable performance of its superintendent

Here is what he did

From April 16, 1940, to February 6, 1941, he kept that Dubbs unit on stream 97.05 per cent of the time and he is holding the pace

Down time is mighty short

By carefully training his crews and planning every move, he has the unit cleaned out and back on stream in 19 hours from the time the fires are cut The rest of the time it is making Dubbscracked gasoline

It's a good thing he's speedy because the customers go for this gasoline so strong that the plant is pushed to the limit all the time It's generally so in Dubbs refineries everywhere

Congratulations to that superintendent—and to the company he works for

Universal Oil Products Co
Chicago, Illinois

Dubbs Cracking Process
Owner and Licensor

Operators at Nowata Protest Proposed Oologah Dam

By PAUL REED

OIL producers operating in the Nowata field protested last week against the proposed $8,500,000 project for the construction of a flood-control dam which would cause the periodic inundation of a large part of the producing area where oil is produced by the water-flooding method on a larger scale than anywhere else in the Mid-Continent. A hearing was held by U. S. Engineers, War Department, in the courthouse at Claremore, Okla., March 5, for the purpose of explaining the project and hearing arguments presented by those affected favorably and adversely by the changed conditions which it would produce. After hearing the main features of the undertaking described by Maj. H. A. Montgomery, statements were presented by those representing varied interests in the surrounding area. The case for the oil producers was handled in statements made by David G. Powell, executive vice president, Oklahoma Stripper Well Association; J. Wood Glass, attorney; and Howard J. Whitehill, president, Whitehill Corp. A standing vote indicated that those attending the hearing were opposed to the project 6 to 1.

In presenting data regarding the proposed dam, Major Montgomery mentioned the following facts: The site is about 2 miles southeast of Oologah and 18 miles south of Nowata. As a flood-control project the dam would control flows from 4,225 sq. miles, or approximately 52 per cent of the Verdigris River watershed. A dam at this site constructed for flood control, recreation and wild-life refuge purposes would be of rolled earth, about 3,600 ft. long with a crest at elevation of 683.4 ft. The spillway weir would be of concrete with its crest at elevation 650 ft. Five sluices would provide for the passage of limited amounts of water and the discharge of flood waters. When filled to the spillway crest, the reservoir would cover about 42,000 acres. The communities of Alluwe and Coody's Bluff would probably have to be located on higher ground outside the reservoir area. All owners damaged would be reimbursed.

Extent of Inundation

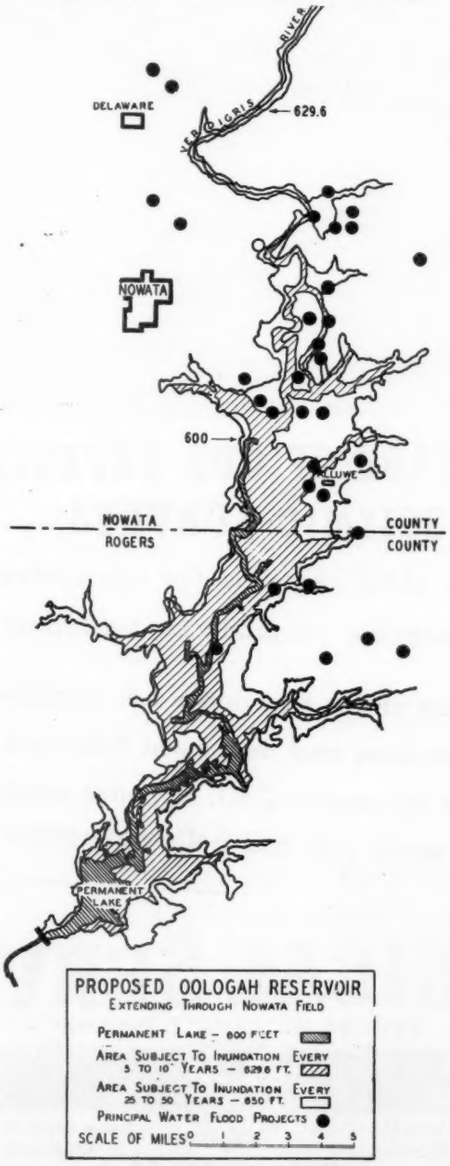
According to estimates, the entire reservoir area of 42,000 acres may be inundated every 58 years; 21,750 acres may be inundated every 10 years with the surface of the water at elevation 629.6 ft.; every 3 years 11,500 acres may be inundated at elevation 617.6 ft.

The dam is to be one of four that have been authorized. A statement was made that the War Department does not wish to build a project which the majority of those affected do not want.

Construction of the project would require 3 years. With a year required for necessary appropriations and preparation it would be approximately 4 years before the dam would be in operation and the land subject to greater inundation than at present.

Results of investigations of United States engineers indicate that in the flood-control pool between elevations 600 and 650 ft. there are about 2 224 oil wells, now producing or that have produced in the past, with indications that a minimum of 950 additional wells will have to be drilled, if the water-flooding method is continued. In opinion of United States engineers, water-flooding methods of producing oil might be conducted so that recovery operations might be completed in 5 years. Under the Flood Control Act of 1936, as amended, the federal Government would pay for actual taking or damage, but these statutes prohibit payment for any speculative damages. Such oil operators as might be damaged would be reimbursed or their operations improved at federal expense so that no damage occurred.

In discussing the effect of the dam on oil producers affected by the project, Mr. Whitehill referred to the following points: If the Oologah Dam is built, 15,660 productive acres will be inundated on which there were originally drilled 3,000 producing oil wells. During the last 5 years, with secondary recovery, the number of wells located on this same submerged area has been more than doubled. From laboratory analyses of cores of sand taken in almost every section of the area to be submerged, oil in place varies from 12,500 bbl. to 35,000 bbl.; total oil in place at this time in the area to be covered by the impounded water amounts to 235,630,000 bbl. Using a 35 per cent recovery factor under the water-flooding method, it will be possible over a period of years to recover 82,470,500 bbl. of oil from this area which is to be submerged. Should the price of oil ever reach $2.25 per bbl. it would be feasible to mine the oil so as to recover a total of 235,630,000 bbl. Water-flood development costs vary between $1,250 and $2,000 per acre. At the present rate of expansion, it will take 45½ years to completely develop all producing areas in Nowata and Rogers counties by water flooding.



Producing area affected by dam

The State of Oklahoma has a stake in this matter since the 5 per cent gross production tax on the value of 82,470,500 bbl. of oil at current prices amounts to $4,123,525.

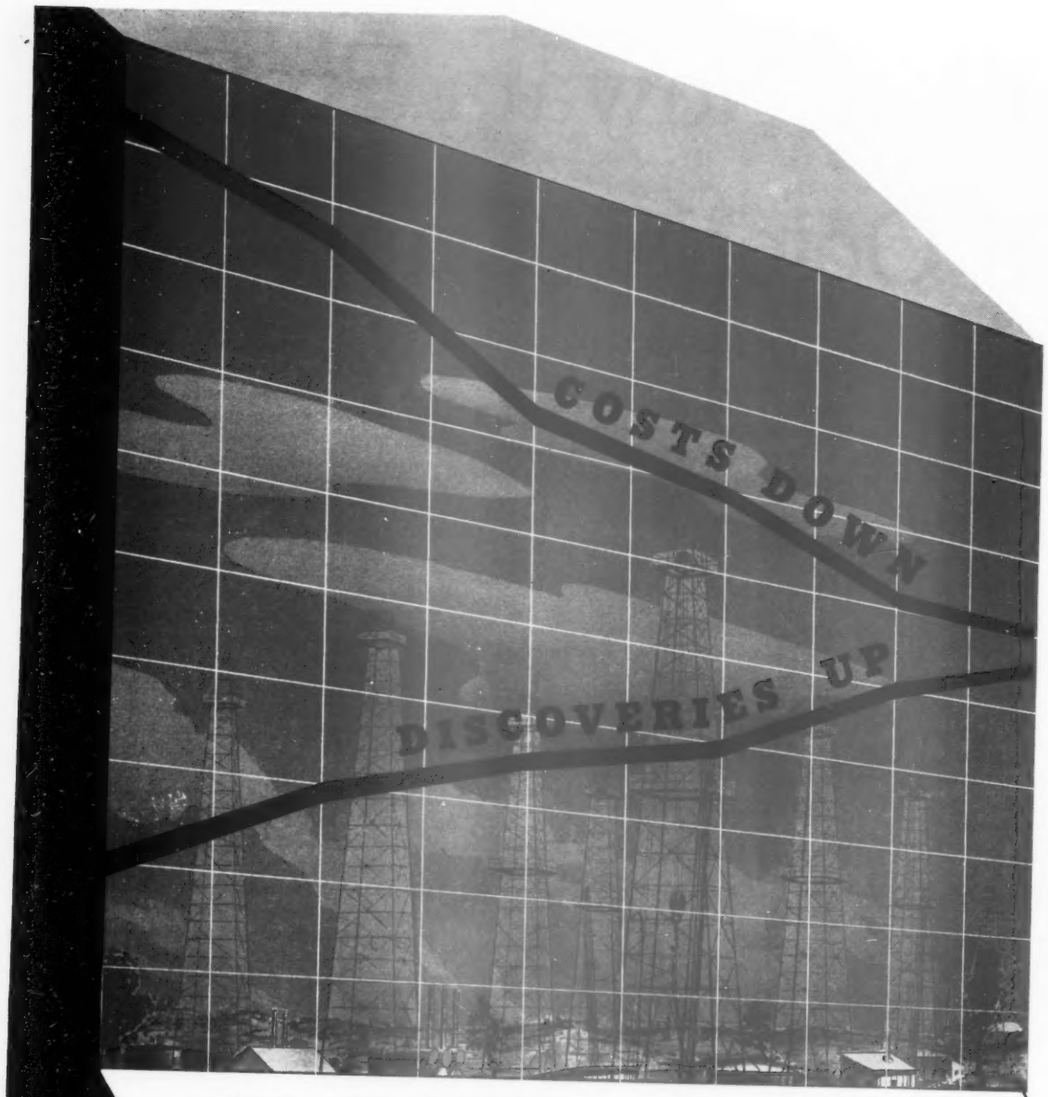
In taking into consideration losses of all kinds to the community affected by the flood it is estimated that the annual loss would be $1,015,735 and the permanent loss would be $85,657,151.

Effect on Operations

It was pointed out that there is justification for believing that maximum floods will occur more frequently than indicated by the schedule released by Army engineers. Some proponents of the dam may ask, why, if producers can operate under ordinary flash-flood conditions, could they not operate under flood conditions created by the dam? It is believed that instead of being under water 3 or 4 days under present conditions, properties may be under water 20 to 25 days, if the dam is filled to capacity.

Furthermore, the plan for putting equipment above high-water levels is impracticable. Tanks, power houses, lease houses and all such structures and equipment would have to be moved to high ground several miles from the leases.

In the time which has elapsed since the hearing, producers in the Nowata field have considered the suggestion of Major Montgomery that they step up their operations, in the area to be inundated during the next 5 years, in order to deplete to the economic limit. It is estimated that such a program would call for the drilling of 15,000 wells in 2 years. Under the 40-hour-week regulations, more crews and machines would be required than are available in the shallow area; furthermore, development on this scale would require an investment of more than $20,000,000. With oil production in the field increased to several times what it is now, there is a possibility of conflict with state proration authorities under market conditions existing 2 and 3 years ahead which cannot be definitely predicted now.



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International

Ecuador . .

New Exploration Work Stimulating Interest

EXPLORATORY operations under way in Ecuador on several concessions including those held by International Petroleum Co., Ltd., and Anglo-Saxon Petroleum Co., Ltd., make this country one of the most interesting in South America. International's concession covering 10,000,000 acres centers on the port of Guayaquil. Anglo-Saxon's 25,000,000-acre concession is in the Oriente inland from the western coastline.

International started geophysical work on its concession in 1939. The concession provided for a 4-year period of exploration. The company has carried out some drilling but results are not known.

The Santa Elena Peninsula on the west coast of Ecuador produces approximately 2,000,000 bbl. annually mostly from the operations of Ecuador Oilfields, Ltd. The company operates a skimming plant having 650 bbl. daily capacity and V. H. Perkoff is superintendent.

Ecuador Oilfields' producing activity is concentrated in three areas which range in age from 4 to 20 years. Combined production from the three areas averages a little more than 3,000 bbl. daily.

Pertinent data on Ecuador Oilfields' producing areas follows:

	Names of fields		
	Tigre	Santa Rita-Achallan and San Raimundo	Cautivo and Anhyiquimi
Producing wells	5	51	28
Daily production	1,800 bbl.	190 bbl.	30 bbl.
Wells drilling	1	2	None
Producing depths	4,000 ft.	500-1,200 ft.	500-1,200 ft.
Gravity of oil	39° A.P.I.	28° A.P.I.	35° A.P.I.
Base of crude	Paraffin	Ashpalt	Mixed
Outlet	Local	Refinery	Refinery
Age of field	4 years	5 and 8 years	20 years

Trinidad . .

Antilles Company's Oil Output Cut 15 Per Cent

ANTILLES PETROLEUM CO. (Trinidad), Ltd., wholly owned subsidiary of McColl-Frontenac Oil Co., Ltd., produced 218,844 bbl. of crude in 1940 compared to 251,619 bbl. in the preceding year, a reduction of 15 per cent.

Antilles has 63 producing wells currently yielding about 18,000 bbl. a month.

Drilling was suspended and other operating expenses curtailed during 1940, according to a discussion of Trinidad activities in the annual report of the parent company released in Canada last week.

Italy . .

Restrictions Tightened on Gas-Oil and Fuel-Oil Use

THE growing shortage of gas oil has resulted in a new set of regulations under which a limited quantity will be distributed monthly in each province.

This information has been transmitted to the U. S. Department of Commerce through trade attaches in Rome.

Applicants for purchases are required to show the amount of fuel consumed during the first three quarters of the year, as well as data on the type and capacity of their industrial motors or trucks, the average distances covered, stocks of gas oil still on hand, and other proof of actual need. With the continuation of the war, the insufficiency of all petroleum products is being felt with increasing keenness, but the most serious shortage is in fuel and gas oil.

Argentina . .

Official Oil Production for 1940 Put at 20,610,720 Bbl.

ARGENTINA produced 20,610,720 bbl. of crude oil in 1940, an increase of 10.72 per cent over 1939 output, it was revealed by official figures from Buenos Aires last week.

National oil fields operated by Yacimientos Petroliferos Fiscales accounted for 12,475,599 bbl. Subsidiary operating companies of Standard Oil Co. (New Jersey), Royal Dutch-Shell, Texas Co., and the English Railways produced most of the other 8,135,121 bbl. recovered last year.

Outstanding in the 1940 production record is the increased production from the Province of Mendoza in the western part of the country. Mendoza produced 2,134,226 bbl. in 1940 compared to 897,685 bbl. in 1939.

Cuba . .

Royalty on Naphtha Is Increased to 10 Per Cent

THE ministry of agriculture has increased the royalty collected from domestic producers of naphtha from 5 to 10 per cent of the market value of the product at the well. A law of May 9, 1938, which established a 5 per cent royalty on naphtha, provided that when total production on the island exceeded 2,500,000 gal. annually the royalty would be increased to 10 per cent.

Total production of naphtha in the Motembo area of the Province of Las Villas, during the period January 1 to November 30, 1940, amounted to 4,947,625 gal., it is stated.

South Africa . .

Expansion of Recovery From Torbanite Planned

PLANS for production of 3,000,000 imperial gallons of oil from torbanite have been projected for 1941 by the South African Torbanite Mining & Refining Co., Ltd.

The company produced 2,539,040 imperial gallons of oil, an average equivalent of 45.5 imperial gallons per ton of torbanite retorted during the year ended June 25, 1940.

The refinery at Boksburg requires imported crude oil to augment the supply recovered from torbanite mines at Ermelo, Transvaal.

U. S. S. R. . .

Production of 277,000,000 Bbl. Is Planned This Year

PROGRAM for the U.S.S.R. petroleum industry in 1941 calls for production of more than 277,000,000 bbl., it has been announced in dispatches from Moscow. The commissariat of the oil industry is quoted as saying that production for January and February of this year has exceeded quotas and that prospects are bright for fulfilling the projected assignment.

Crude production in 1940 in the U.S.S.R., including Sakhalin, is estimated at 220,000,000 to 225,000,000 bbl.

Kuwait . .

Kuwait Oil Co. Obtains Concession on Sulfur

Kuwait Oil Co., jointly owned by Gulf Oil Corp. and Anglo-Iranian Oil Co., has obtained a concession from the Shaikh of Kuwait to exploit the sulfur deposits of his territory. The company has developed oil production in the Persian Gulf kingdom but commercial exploitation has been restricted by the lack of transportation facilities. Since start of the European war no details have been released on Kuwait Oil Co. operations because of the British domicile of Anglo-Iranian.

Mexico . .

Labor Demands Replace Expropriation Topics

MANAGEMENT of Petroleos Mexicanos, the Mexican Government oil company, has promised representatives of the labor syndicates a full hearing on reduction of personnel which has been adopted as a means of liquidating the operating deficit of 68,000,000 to 150,000,000 pesos. There has been no change in the policy of Petromex but a hearing has been promised as a gesture.

Efrain Buenrostro, general manager installed after the election of President Camacho, has pledged protection for the workers in the reorganization shuffle. Demands from 32 secretaries of the local syndicates are now before the manager for consideration. The demands call for reduction of the work week to 44 hours, compared to 48 now in existence, and that medical service be expanded.

Discussions over the settlement of the oil expropriation question are still under way, according to advices from Mexico City, but an agreement between the government and private companies appears a little less imminent than before.

Closer relationship between Mexico and the United States, indicated by imminence of the mutual-assistance discussions in Washington, D. C., may have a salutary influence on the oil-expropriation question. There has been no mingling of defense and industrial discussions so far but observers consider the relationship unavoidable in the final analysis.

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Natural Gas News

Gas-Liquefaction Plant Is Placed in Operation

CLEVELAND, Ohio, Mar. 10.—The $1,200,000 gas-liquefaction plant built here by East Ohio Gas Co. to cushion peak-load demands has been placed in operation and is now supplying fuel to Cleveland augmenting the routine supply.

Cleveland has an average daily gas consumption of 80,000,000 cu. ft. with the peak winter load running much higher. In recent winters it has been necessary to curtail or eliminate some of the industrial consumption to meet the peak-domestic requirements.

By storing 50,000,000 cu. ft. of liquefied natural gas in each of three spherical tanks, East Ohio will now be in position to meet the peak loads on all classes of consumers simultaneously without otherwise extending its gathering and transmission systems. Gas in excess of immediate requirements during mild days is being liquefied by compression and refrigeration and held in storage until peak demand necessitates regasification of part of the reserve supply. Liquefaction is accomplished by compressing the gas to 600 lb. per sq. in. pressure and then cooling it to 250° F. below zero.

J. French Robinson, president of the company, was quoted as saying the experiment was more than fulfilling expectations and that the entire industry was interested in the performance of the plant which is the only one of a commercial scale in the world.

The process was developed from laboratory and pilot-plant investigation conducted over a period of the past several years.

More Opelika Acreage To Receive Development

Six new wells are to be drilled on the Opelika gas-distillate-producing structure in Henderson County, Texas, as one of the projects resulting from successful communitization of 3,000 acres in addition to acreage previously unitized.

Reports are that wells are to be drilled in the S. Anglin, S. Hatton, J. Acosta, North A. Anglin, and W. P. Wyche surveys. Operators involved are Shamrock Oil & Gas Corp. and Lone Star Gas Co.

Program Completed for Gas Measurement Course

Approval was given the final program in Tulsa this week for the seventeenth annual Southwestern Gas Measurement Short Course which will be held at the University of Oklahoma, College of Engineering, Norman, Okla., April 15, 16, and 17. G. W. McCullough, Phillips Petroleum Co., Bartlesville, Okla., chairman of the program committee, reviewed the complete arrangements at a meeting of his committee March 10. Ray L. Rountree, United Gas Pipe Line Co., Shreveport, La., is chairman of the general committee.

Chairmen of other committees besides Mr. Rountree and Mr. McCullough are: W. H. Carson, dean of the college of engineering, University of Oklahoma, local arrangements, banquet and entertainment; Earl Kightlinger, Arkansas Louisiana Gas Co., Shreveport, publications; C. A. Gibson, Cities Service Co., Bartlesville, exhibits; R. M. Scofield, Lone Star Gas Co., Dallas, study of practical methods; and Miss Kate A. Niblack, Oklahoma Utilities Association, Oklahoma City, registration and publicity.

Cities Service Completes Large Vertical Compressor

One of the largest vertical compressors for gas pipeline service has been completed at the Cities Service Gas Co.'s Pampa, Tex., station. The engine is a 1,000-hp., 10-cylinder vertical V-type built especially for the Pampa station. The new unit weighs approximately 55 tons without flywheel and compressor. The vertical-type engine requires less floor space than horizontal models and there is a considerable saving in weight and foundation requirements.

The compressor equipment at the Pampa station prior to the installation of this unit consisted of six 1,000-hp. horizontal engines. The addition of this unit will afford more flexibility in the operation of the station and will allow the station to be operated with lower intake pressure than heretofore.

The Pampa station is the first compressor station on the 20-in. Texas line, which transports gas from the Pampa field to Wichita and other Kansas markets.

Natural Gasoline

Gulf Running Natural Gasoline From Opelika

ATHENS, Tex.—Gulf Pipe Line Co. has contracted to purchase between 4,000 and 5,000 bbl. of natural gasoline daily from Lone Star Gasoline Co. and Shamrock Oil & Gas Corp. in the Opelika gas-distillate area of northeastern Henderson County, Texas. Deliveries have started.

The gasoline is being moved through a new 4-in. welded line from Opelika to Big Sandy, Tex., a distance of 44 miles, where the stream enters the Gulf's main line to Beaumont. The gasoline had been going to East Texas refineries prior to consummation of the Gulf contract.

The Lone Star and Shamrock plant has a capacity of 52,000,000 cu. ft. daily. The Opelika field produces from the Rodessa section of the Glen Rose lime with an average depth of 8,200 ft. Lone Star and Shamrock are now attempting to unitize their acreage on the structure to expand development.

Recycling News

Magnolia Will Purchase La Gloria Field Condensate

Construction is nearing completion on the La Gloria Corp. recycling plant in the La Gloria field, Jim Wells County, Texas, and plans have been completed for delivering condensate production to Magnolia Petroleum Co. at its Corpus Christi terminal.

Magnolia Pipe Line Co. is laying a 4-in. line from the La Gloria field to Premont, Tex., and from that point to Corpus Christi the carrier will be 6-in. giving the system a capacity of 6,000 bbl. daily.

Refinery Expansion

Atlantic Refining Co. Appropriates Total of $7,750,000 for Refinery Expansion

PHILADELPHIA, Pa.—A plant for the manufacture of 100-octane aviation gasoline for use in military flying is planned by the Atlantic Refining Co. at its Point Breeze refinery, Robert H. Colley, president, announced last week in the annual report to stockholders.

"The plant will round out our facilities and enable us to contribute our full share to the national-defense effort," Mr. Colley said. The project is now in the blueprint stage, and it is contemplated that construction will get under way later in the year.

Pointing to the "increasing importance" of petroleum products in modern military and naval combat, Mr. Colley asserted there was now "a sound basis" for assuring the Government and civilians their "utmost predictable needs" would be "surely and promptly met."

"It is important for our national welfare," he added, "not only that the military be supplied with unstinted quantities of products of the highest quality but that the supporting plants catering to the material welfare of the civilian population should not be impeded in their activities by restrictions in the use of petroleum products."

The new aviation-gasoline unit is one item on Atlantic's refinery-expansion plans for 1941 which project outlay of $7,750,000.

Other additions to refinery equipment scheduled in 1941, it was reported, include a new catalytic-cracking plant to supplement the new catalytic polymerization plant at Point Breeze and an advanced-type unit for the company's Atreco, Tex., refinery. These units will further improve the quality and increase the quantity of the gasoline output.

The company also will commence construction during 1941 of another crude-oil distillation unit complete with desalting, catalytic desulfurization, and hydrogen-sulfide-disposal equipment. The four units announced last week will cost approximately $4,500,000.

Mr. Colley announced the company's new $1,300,000 terminal at Fort Mifflin on the Delaware River would be completed this summer. The terminal is intended to facilitate receipt of shipments of crude oil. It comprises a dock, four 80,000-gal. storage tanks, and two 16-in. pipe lines leading to the Point Breeze refinery, 5 miles distant.

Plans also were announced for building three more tankers after a fifth new 19,405-ton vessel is launched March 15. One vessel of this size will be delivered in the autumn of 1941, another in the spring of 1942, and a third of 13,000 tons early in 1943. The Atlantic fleet now comprises 23 vessels, with total deadweight tonnage of 262,376 tons.

Mid-South Acquires Plant Site Near Jackson, Miss.

JACKSON, Miss.—Work on Mid-South Refining Co.'s refinery here is scheduled to be started in the immediate future following the company's acquisition of a 94-acre tract north of Jackson on the Yazoo & Mississippi Valley Railroad. The company plans to build a plant having a crude capacity of 6,000 bbl. daily with a 1,500-bbl. cracking unit. It will manufacture gasoline, diesel oil, kerosene, motor oil and greases. H. S. Christian of Tyler, Tex., is president of the company and Jack Hall, general superintendent.

Mid-States Adds Treating Unit at Falls City Plant

FALLS CITY, Neb.—Mid-States Refining Co. has completed the installation of a 500-bbl. unit for treating tractor fuels and distillates at its refinery here, and is building two 1,500-bbl. tanks for storing fuel oils. The company operates a 3,000-bbl. skimming plant.

Evansville Increasing Plant Capacity by 50 Per Cent

EVANSVILLE, Ind. — Construction of additional crude units at the 2,000-bbl. plant of Evansville Refining Co. here has been started and will be completed about May 1. The new units will increase the plant's crude capacity by 50 per cent and will permit the manufacturing of 82-octane motor fuel. Cost of the new construction will approximate $60,000.

Crude-Oil Exports Decline; Refined Products Increase

NEW YORK, Mar. 11.—Preliminary reports on exports of crude oil and refined products from the continental United States for January 1941, show a decline for the former and an increase for the latter from December. Crude-oil exports dropped 400,000 bbl. while product shipments rose 700,000 bbl. Total oil exports in January were 6,923,582 bbl. against 6,625,622 bbl. in December, and 10,625,197 bbl. in January.

The accompanying table shows crude and refined-oil exports by major countries of destination. Crude-oil exports to Canada and Japan declined 100,000 bbl. each. Argentina and Brazil, which took 94,967 and 96,517 bbl., respectively, in December suspended imports from this country in January.

Principal changes in gasoline exports were increases to United Kingdom, 225,000 bbl.; China, 100,000 bbl.; Australia, 88,000 bbl., and United States territories, 160,000 bbl. Decreases were shown by Canada of 90,000 bbl.; Netherlands West Indies, 160,000 bbl.; Japan, 340,000 bbl., and U.S.S.R., 175,000 bbl. Principal changes in kerosene were Canada's 29,000-bbl. decrease and the territories' gain of 34,000 bbl.

Gas-oil and distillate-fuel exports to Japan rose 435,000 bbl.; to the United Kingdom, 300,000, and to Spain, 30,000 bbl., but exports to the Netherlands West Indies fell 143,000 bbl. Cuba's gain of 113,000 bbl. and the territories' increase of 95,000 bbl. in residual fuel oil were partially offset by Spain's 49,000-bbl. and Canada's 43,000-bbl. declines. Major lube-export changes were gains in shipments to United Kingdom, 50,000 bbl., and to U.S.S.R., 14,800 bbl., and declines to Brazil, 22,000 bbl.; Japan, 65,000, and Canada, 14,000 bbl.

CRUDE AND REFINED-OIL EXPORTS BY MAJOR COUNTRIES OF DESTINATION

(Figures in barrels)

Destination—	Motor fuel	Kerosene	Gas oil, distillate	Residual fuel oil	Lube oils	Crude
Spain	76,075	3,058	121,766	48,721	5,177	.....
United Kingdom	414,224	.....	421,495	.....	128,549	.....
Canada	84,896	2,564	41,766	22,117	47,367	1,004,353
Cuba	123,112	38	.....	166,018	3,930	72,103
Netherlands West Indies	16,540	5	.....	.....	3,151	.....
Argentina	555	.....	.....	.....	949	.....
Brazil	72,960	19,101	17,169	.....	10,702	.....
China*	144,767	.....	10,896	.....	34,301	79,087
Japan	310,675	.....	647,708	91,252	95,351	520,534
Australia	87,843	5,087	20,671	.....	36,857	.....
U.S.S.R.	28,017	409	2	.....	14,800	.....
Territories	284,367	38,626	116,368	243,435	14,105	.....
January 1941	2,041,474	91,814	1,594,785	974,616	534,123	1,686,770
December 1940	1,982,802	115,630	952,713	912,906	587,914	2,073,657
January 1940	2,275,148	391,053	1,549,312	1,139,004	1,068,303	4,202,377

*Includes Hong Kong and Kwantung.

Single or Dual Temperature Reading Chief Disparity

EQUAL division of policy among purchasing companies on the mechanics of gaging oil in the Mid-Continent is developing as a result of changes instituted at the time 100-per-cent tank tables were adopted February 1. Replies to questionnaires sent to all purchasing companies in Oklahoma and Kansas by a committee of the Petroleum Accountants Society of Oklahoma indicate rather deep-seated convictions.

In practice, there has been a tendency displayed to favor the abridged volume-corrosion-table supplement to the National Bureau of Standards circular No. C-410 in correcting for temperature deviation from 60° F. There are a few outstanding exceptions to this trend in purchasing-company policy. Several still favor the uniform use of 0.004 coefficient, apparently with a view to correlating Oklahoma and Kansas policies with Texas and New Mexico. One of the chief differences apparent in the replies received by the accountants' committee so far is in the practice of temperature determination. Out of the 15 replies received so far, 8 favor a single temperature reading on the oil at the time tank is turned on the line. Seven companies replying favor two temperature readings, one at the start of the tank run and the other at the close. Both temperatures are used in computing the volume run which adds one calculation in the office. Those favoring a single temperature reading at the start of the tank run restrict this policy to lease tanks. Claim is made that the time interval is customarily so short that little deviation exists between the opening and closing temperatures and that, therefore, the dual reading is ordinarily a useless step.

Comments of those favoring dual temperature readings contend that this procedure is favored by the A.P.I. committee on standard gaging practices and that the policy gives a more accurate determination. The opening temperature may, for example, apply to volume correction on 10 ft. of oil, while the closing temperature applies to only that portion remaining in the tank after the run is completed.

Questionnaire of the accountants society committee asked for comments on three main questions of volume determination. They are the question of one or two temperature readings, that of volume-correction coefficients and whether a single coefficient is favored for determining "net oil" which adjusts volume to 60° F. and deducts contamination in one operation. A second portion of the questionnaire deals with the question of adopting a standard run ticket.

The Petroleum Accountants Society expects to tabulate the replies and submit the conclusions back to the purchasing companies for further study and consideration.

DEATHS

JOHN H. REYNOLDS, 82, pioneer oil producer in the Bradford and Allegany fields, died at the home of his daughter, Mrs. Charles A. Chipman, at Bolivar, N. Y., on March 2. Born in Brookville, Pa., Mr. Reynolds went to Bolivar in 1882 shortly after the discovery of oil in that territory. He soon owned extensive holdings. He was associated with Nathan Nichols, of Bradford, Pa., in the Victor Oil Co. He also owned properties in Ohio, West Virginia, Michigan, Kentucky and Oklahoma.

G. F. MAHAN, 78, retired vice president and general manager of National Supply Co. in Oklahoma, Kansas and Texas, with headquarters in Independence, Kans., died suddenly March 11 at his home in Toledo, Ohio. Mr. Mahan had retired several years ago. He leaves his wife and a son.

JOHN T. RYAN, 57, president of Mine Safety Appliances Co., Pittsburgh, Pa., died February 20, in Miami, Fla. A native of Pennsylvania, Mr. Ryan had spent his entire business life in the mining industry. He leaves his widow and a son.

JAMES ALOYSIUS LONG, 82, retired division superintendent of the Ohio Oil Co., died at St. Marys, Pa., after a long illness caused by a heart ailment. He had been identified with the Ohio company ever since he was 14 years old. One daughter survives.

JAMES A. CARROLL, 73, superintendent of the claims department of the Sinclair Prairie Oil Co., died last week at his home in Tulsa. He had been suffering from a heart ailment for a year, but he spent part of each day at the office. He had been associated with Sinclair Prairie for 25 years. His wife, a son and three daughters survive.

WILLIAM HALL BARROWS, former executive of Texas Oil Co., in New York, N. Y., died at his home in Shreveport, La., last week, after a lingering illness. He leaves his widow.

J. E. PENNYBACKER, managing director of the Asphalt Institute, died February 25, at Delray Beach, Fla., where he had gone to try to regain his health. He resided at White Plains, N. Y. He leaves a widow and a daughter.

LESLEY SMITH, 38, Brundred Oil Corp., Oil City, Pa., was fatally injured while working on a lease of the company on March 1. Mr. Smith was found unconscious, suffering with a head injury. He was believed to have fallen, striking his temple, but the manner in which the injury was received was not learned. He leaves his wife and two daughters.

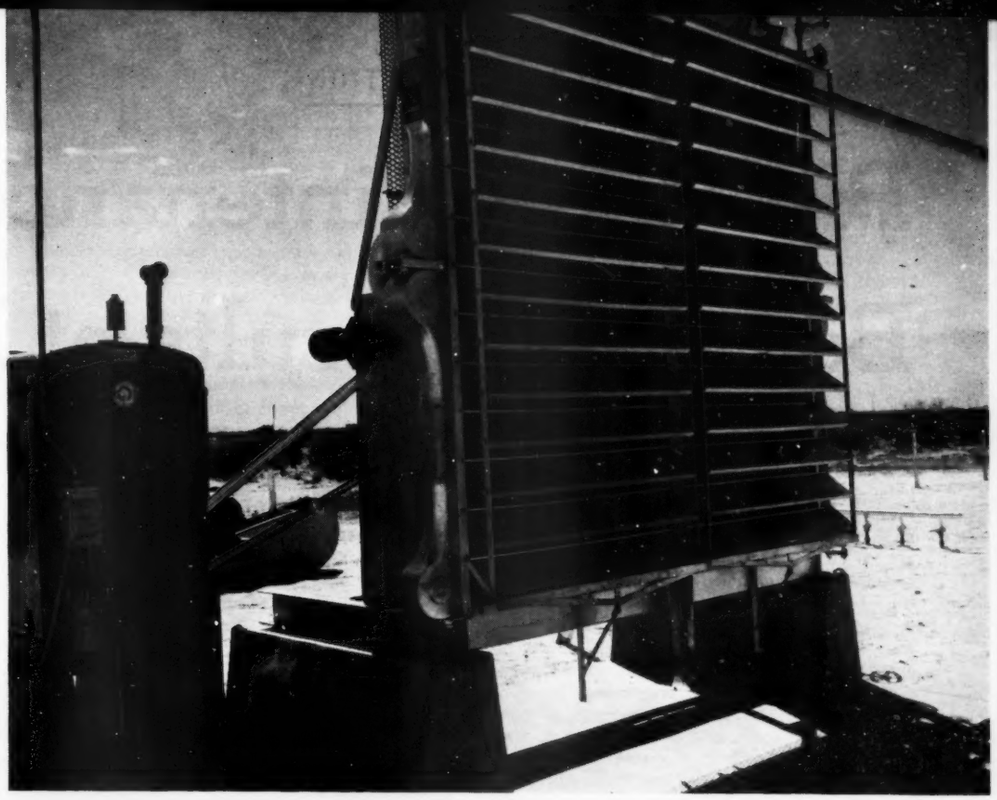
JAMES BRAHANEY, 79, of Rocky City, N. Y., believed to have been the most extensive individual oil producer in the Pennsylvania Grade crude region, died March 7 in an Olean, N. Y., hospital after a prolonged illness. Born at Portage, N. Y., he went to Titusville, Pa., in his youth and there entered the producing business. He went to Rocky City 65 years ago when that field was opened.

EDWARD PHILIP FISCUS, 58, of Clarendon, Pa., was instantly killed in a fall from a tank of the Seneca unit of the United Refining Co., of Warren, Pa., March 3. His neck was broken. He was believed to have lost his footing when he climbed to the top of a tank to gage its contents. He leaves his widow, two sons, and four daughters.

Antitrust-Case Retrial Postponed Until May 12

MADISON, Wis., Mar. 11.—Retrial of nine defendants remaining in the Government's price-fixing conspiracy case against major oil companies has been postponed from April 14 to May 12 on order of Judge Walter C. Lindley, H. C. Hale, clerk of Madison federal court, announced today.

The defendants, granted new trials by federal Judge Patrick T. Stone when 12 corporations and 5 individuals were found guilty in January 1938, include two corporations and seven individuals.



In West Texas and other areas, high winds often cause large water losses from cooling towers if they are of the open type. Where there is a plentiful water supply this is no problem, but in some areas good cooling water is scarce. The large fan-cooled radiator shown here is used at a repressuring plant in the Kermit area (see p. 34) for cooling jacket water circulated to a 300-hp. compressor. The fan is belt driven by a multi-cylinder gas engine which also drives a generator supplying power for the plant

ENGINEERING & OPERATION

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Pressure Maintenance Yielding Beneficial Results at Kermit

By D. H. STORMONT

IN a low-pressure area of its Walton lease in the Kermit field of West Texas, Magnolia Petroleum Co. is obtaining highly satisfactory results from a pressure-maintenance project—the first undertaken in West Texas. To date over 4,719,314,000 cu. ft. of gas has been returned to the producing formation with the result that a number of wells previously not capable of making their allowables are now doing so, and wells that were on artificial lift are now flowing their production. Other favorable results obtained include a check in the decline of bottom-hole pressures, a rise in the fluid level and decrease in gas-oil ratios of some wells, and the checking of water encroachment in at least one well.

The Magnolia project differs from usual pressure-maintenance and repressuring operations in that the pay zone into which gas is being returned is composed of lenticular sands, some producing oil and gas and others producing only gas. To make the project even more difficult, practically all wells involved had been given heavy shots of nitroglycerin upon completion. This makes it impossible to run liners and shut off the gas-bearing sands, or use of other mechanical methods that will permit gas injection into only the desired oil-producing sands. Thus control of the gas drive, on the whole, must be accomplished solely from the surface through proper selection of gas-injection wells and constant control of the gas-injection volumes.

Present pressure-maintenance operations of the company are centered mainly in Section 1, in the southwest portion of its large Walton lease as shown on the accompanying map. This area produces from the Yates sand and lies in the northeast portion of the Kermit field. In Section 1 the company has 58 producing wells and 6 gas-injection wells. Recently, however, a seventh injection well was placed in operation in a low-pressure area of Section 19, two sections north, and work is under way for enlarged operations in Section 19 and entrance into Section 36.

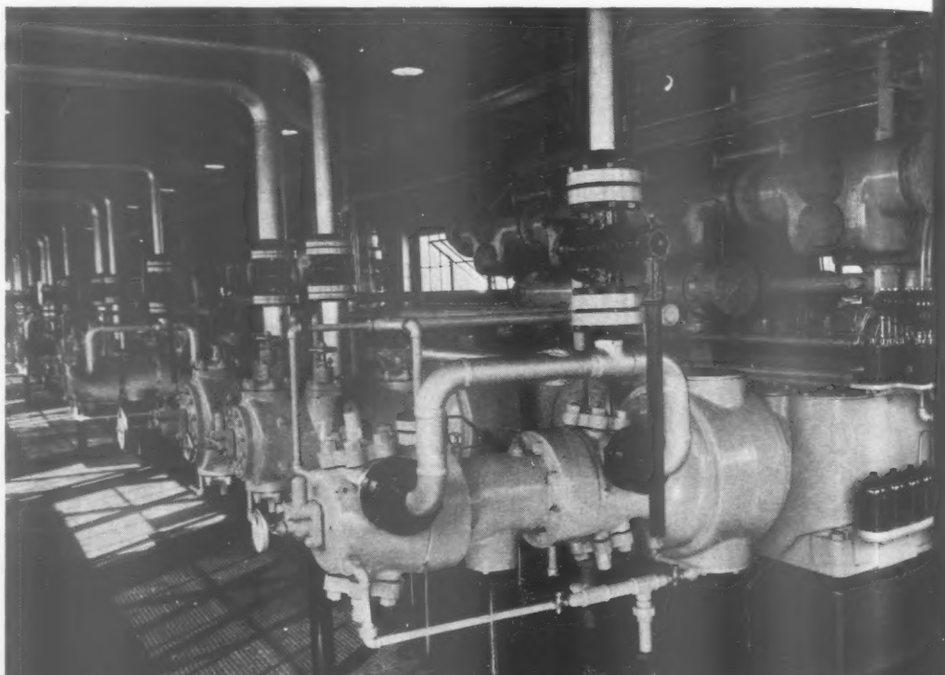
Gas injection into these seven wells averages about 7,000,000 cu. ft. daily at present, and during 1940 averaged some 6,500,000 cu. ft. daily. Injection pressures vary from 706 to 903 lb. and present injection volumes from about 70,000 to 2,500,000 cu. ft. daily per well. The gas is being injected into the Yates sand pay section encountered at about 2,800-2,950 ft.

Initial Experiments

Initial experiments on the feasibility of pressure maintenance in the Kermit area were undertaken by Magnolia in the spring of 1939. At that time a spreading low-pressure area in the southwest portion of the Walton lease was resulting in a decrease of oil production and causing many wells to decline to the critical pressures of 300-350 lb. at which they ceased flowing.

Surveys showed reservoir pressures in the northeast portion of the lease, where a gas cap exists and where the sand lenses tend to be more open, to be in the neighborhood of 900 lb. Due to tight sand conditions and the lenticular nature of the pay, though, the higher pressures in that area were not being communicated to the lower-pressure areas of the southwest section so that the latter area was declining more rapidly than the northeast section. Thus it was necessary that either a large number of artificial-lift units be installed or pressure maintenance be adopted.

A thorough study was made of the pay section and reservoir conditions, and experiments were carried out to determine how the reservoir responded to repressuring and the maximum gas volumes that could be injected without channeling. These experiments proved pressure maintenance feasible so that the 7,500,000-cu. ft. plant was placed in operation about August 1, 1939.



Compression equipment consists of five 300-hp. angle-type engine-driven compressor units with a capacity for compressing 7,500,000 cu. ft. of gas from 35 to 1,000 lb. in three stages

Magnolia Petroleum Co. in the fall of 1939 placed in operation the first pressure-maintenance project in West Texas on its Walton lease in the Kermit field. Since then over 4,719,314,000 cu. ft. of gas have been injected through seven input wells into the Yates sand pay section, with the result that some wells formerly requiring artificial lift are now flowing their production and decline in bottom-hole pressures has been checked.

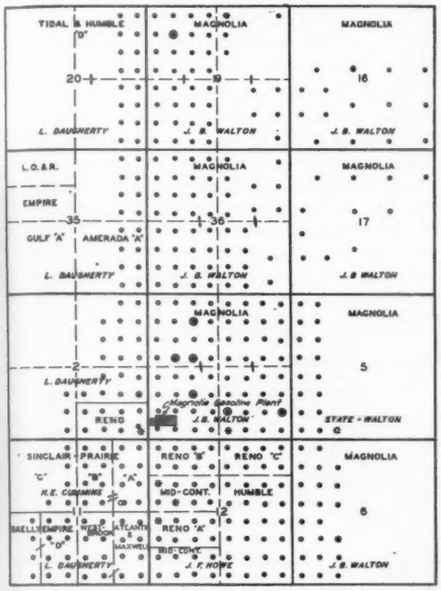
The plant consists of five 300-hp. three-stage angle-type gas-engine-driven compressors with interstage cooling and scrubbing equipment. Residue gas is received from Magnolia's adjacent natural-gasoline plant at 35 lb., compressed to 113 lb. in the low stage, from 113 to 355 in the second stage and to 995-lb. discharge on the high side. The engines are equipped with automatic shutdown devices in the event of low oil pressure, high jacket-water temperatures or excessive engine speeds. Discharge headers and scrubbers are equipped with safety heads and usual safety devices. The gas is cooled in each of the first two stages of compression by circulation through coils in a forced-draft cooling tower, then passed through scrubbers. Engine-jacket water is circulated through a closed system.

When the compression units were installed it was not entirely known just what the pressure range would be in each stage. Thus to insure maximum efficiency at various stages of compression, clearance valves and various size "bottles" are available to take care of suction pressures from 25 to 50 lb. and discharge pressures from 750 to 1,200 lb. This provision allows the engines to develop maximum horsepower within these ranges.

High-pressure gas is discharged from the compressors through a manifold to a main line running up through Sections 1, 36 and 19. Laterals lead from this line to the injection wells.

Each of the seven injection wells is equipped with a pressure-reducer regulator, a volume-flow controller and a recording thermometer. The pressure regulator, of course, reduces the line pressure of the gas to the desired injection pressure. In the event of the flow controllers on some input wells freezing, the regulators were installed to prevent one well from "hogging" all gas.

All injection wells were thoroughly cleansed before gas was started into them. All cavings were removed from the hole and any paraffin accumulation removed from the face of the pay. The latter was necessary to avoid possibility of the high-pressure gas forcing the paraffin into the pay sands and thereby interfering with gas flow into the producing sands.



Above: Map of the northeastern part of the Kermit field where Magnolia's pressure-maintenance project is under way. The seven gas-input wells in Sections 1 and 19 are circled

In usual pressure-maintenance operations the gas is injected into one continuous sand body, or at least into a pay section in which there is some degree of communication over a fairly wide area. In these projects the gas can be injected into the desired pay zone through uniformly spaced injection wells, and the resulting high pressure around the injection wells will drive oil toward offsetting producing wells. By maintenance of proper rates of gas injection and careful check of gas-oil ratios in the surrounding producing wells, to avoid possibility of gas channeling or bypassing, favorable results are usually obtained.

In the Magnolia project the sand body is not continuous; in some wells a great many sand lenses are present, while offsetting wells may have only half as many sand lenses. Thus some injection wells may take gas in sufficient volume, but the injection will have no effect on the oil-producing horizons of adjacent producers. Permeability of the sands varies from zero to several hundred millidarcys, making the possibility of gas channeling extremely easy. Finally, the shot conditions of the bore holes makes impossible the confinement of the injected gas to the desired pay sand or sands.

Choice of Injection Wells

Choice of injection wells in the Magnolia project, therefore, of necessity includes factors in addition to those normally considered in pressure-maintenance operations. In general, a good oil-producing well was selected and gas injection started at the rate of about 50,000 cu. ft. daily. Initial rate of injection, however, depends largely on sand conditions around the injection well so that initial rates varied widely from this average.

Due to the lenticular condition of the pays, the original gas had forced the oil from the more permeable streaks which resulted in decreased oil production and increased gas production. Injecting the gas results in driving oil from the less permeable section.

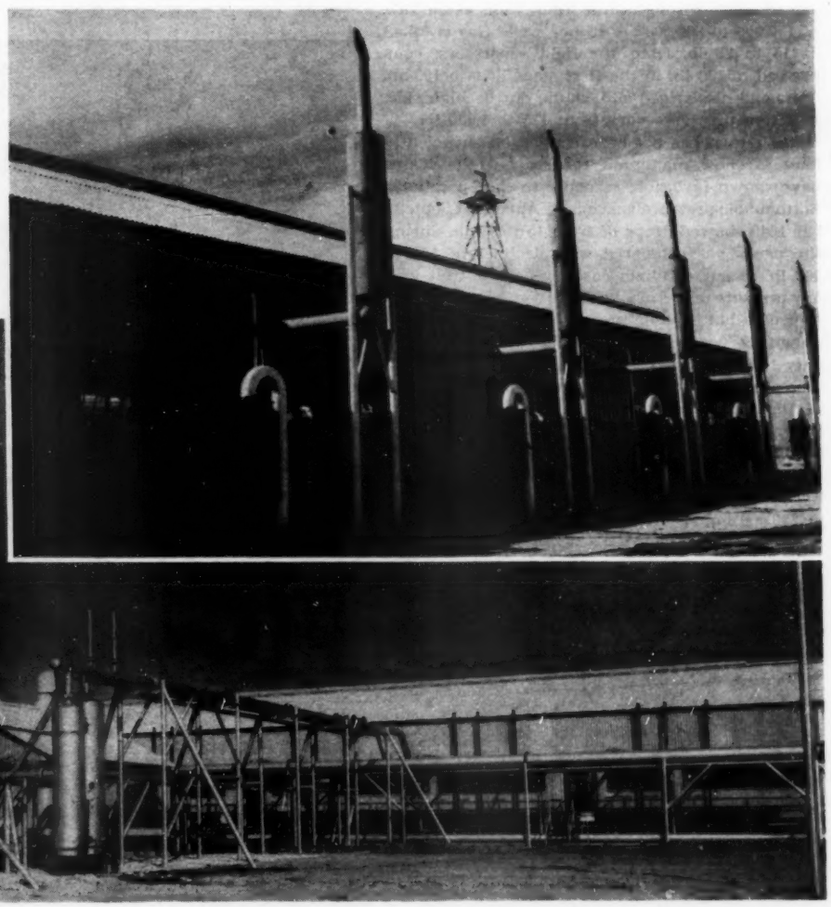
In choice of injection wells, though, it is found the pressure required to force the gas into the pay at some wells may be so high that the resulting decrease in volume causes an overall gas shortage. In this event a well that will take the gas at a lower pressure is substituted. In other words, the project is being carried out along the line of obtaining maximum possible oil recovery from the entire lease; an overall average is maintained rather than attempting to obtain maximum benefit in some particular local area.

When the project was placed in operation, gas-oil ratio tests were taken almost daily on surrounding producers in order to catch the first indication of gas channeling and to check the results of the injected gas on surrounding wells. After some 3 months the surveys were run less frequently by tank batteries.

Due to the nature of the project, it is necessary that there be fullest cooperation between the engineering and production departments. Control of the gas drive is largely by injection volumes so that the engineering department must be familiar at all times with how the wells are being produced. Should one well be produced at too fast a rate, thus lowering fluid level, the action may result in the following survey revealing a sudden change in the well's bottom-hole pressure or increase in gas-oil ratio. The engineering department, not being acquainted with the action, might interpret the condition as being due to gas channeling when such was not the case.

Conclusions

Since the project has not been under way sufficiently long or the benefits confined to the im-



Below: Engine jacket water is cooled in the forced-draft cooling tower at left. All high-pressure piping is carried overhead on supports. Right: Rear view of the compressor building, showing method of supporting the exhaust lines. The lines rest on cross-members of the vertical supports and are held only by trunnions placed at the top. This permits contraction and expansion of lines

mediate area under pressure maintenance, a detailed account of the results accomplished is not possible at this time. That many wells formerly producing by heads, and having difficulty making their allowables, are more easily flowing their production; that some wells, full of dead oil, have been revived and are now flowing; and that the average bottom-hole pressure has been built up all indicate beneficial results are being gained, however. Also the ultimate oil recovery should be increased and the flowing life of wells should be extended.

Pressure-Maintenance Projects Under Way in Permian Basin

By D. H. STORMONT

IN addition to the Magnolia Petroleum Co. project under way on its Walton lease in the Kermit field, four other pressure-maintenance or repressuring operations are being carried on in Winkler and Ward counties of West Texas. These projects are being undertaken on a smaller scale and all have been placed in operation since the Magnolia project got under way late in 1939. Two of these operations are in the Kermit area, and one in North Ward and one in the Payton field. In addition to these, other experimental projects are being carried on in both West Texas and in Lea and Eddy counties, New Mexico.

The operations of the four projects are summarized in the accompanying table. For completeness the Magnolia project, discussed in detail on preceding pages, is also included.

The Luse & Ice project, on its A. Blair and J. O. Brictson leases in the Payton field of Ward County, was placed in operation in the spring of 1940. Gas is being returned to the Yates sand pay at 2,032-2,100 ft. through three input wells at the rate of 150,000 to 300,000 cu. ft. per well. Gas is taken at 15 to 20 lb. from the field separators, compressed to 150 lb. in the first stage of two 165-hp. units and discharged at 1,000 lb. on the high side. Injection pressures vary from 425 to 1,000 lb.

Gas return has not been carried on sufficiently long to show maximum results, but the leases have shown favorable response to the operations. Bottom-hole-pressure surveys in April and September 1940 showed drops of from 15 to 40 lb. during the period, as compared with declines of 150 to 200 lb. in surrounding leases. One key well in a low-pressure area of the lease on a recent test showed a bottom-hole pressure of 325 lb. while an offsetting producer on another property tested only 175 lb. In several wells production has been increased with resulting lower gas-oil ratios. Some of the high-pressure gas is being used for gas intermitting in seven gas-lift wells. Remainder of the 17 wells are flowing, the only ones in the field.

At its Central State Bank of Abilene lease near Kermit, Monday Oil Co. is returning from 125,000 to 250,000 cu. ft. of gas daily to each of four input wells. This project, involving 12 producing wells, was placed in operation in the latter part of 1940. Gas is gathered at about 20 lb. pressure, boosted to 150 lb. in the first stage of a 300-hp. angle-type compressor and from 150 to 700 lb. in the second stage. Injection pressures to the Yates sand pays vary from 360 to 700 lb.

Illinois Oil Co. in July 1940 also started pressure maintenance of its Central State Bank of Abilene lease about 2 miles east of the Monday project. Residue gas from the Cabot Carbon Co. (was Smith Brothers) natural-gasoline plant nearby is taken at 300 lb. and compressed to around 850 lb. for injection into two input wells. This plant has a compression capacity of about 1,600,000 cu. ft. daily, with some 500,000 cu. ft. being returned to Yates sand pays at present.

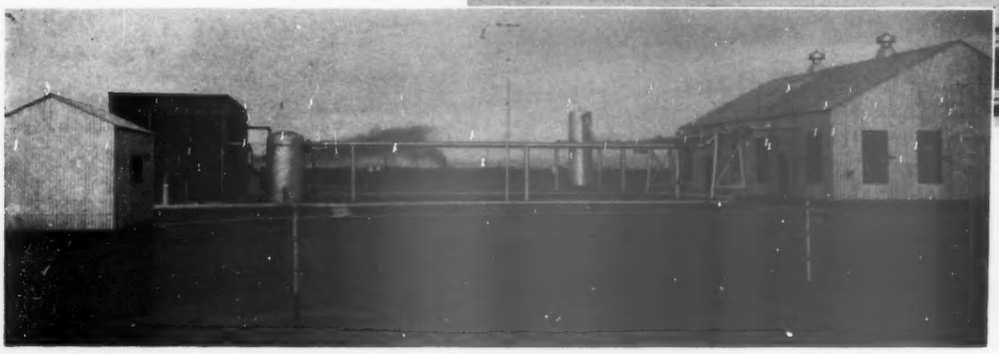
In the North Ward field Gulf Oil Corp. is taking gas from two 2,400-2,500-ft. gas wells at around 600 lb. pressure and injecting the gas to eight input wells on its Hutchings Stock Association and G. W. O'Brien et al leases. In July 1940 the four input wells on the Hutchings property were each taking from 60,000 to 81,000 cu. ft. of gas daily at an average pressure of 227 lb., and the four O'Brien wells, from 60,000 to 74,000 cu. ft. per day at an average of 235 lb. In December some 900,000 cu. ft. were being returned daily to the eight wells at pressures varying from 287 to 552 lb.

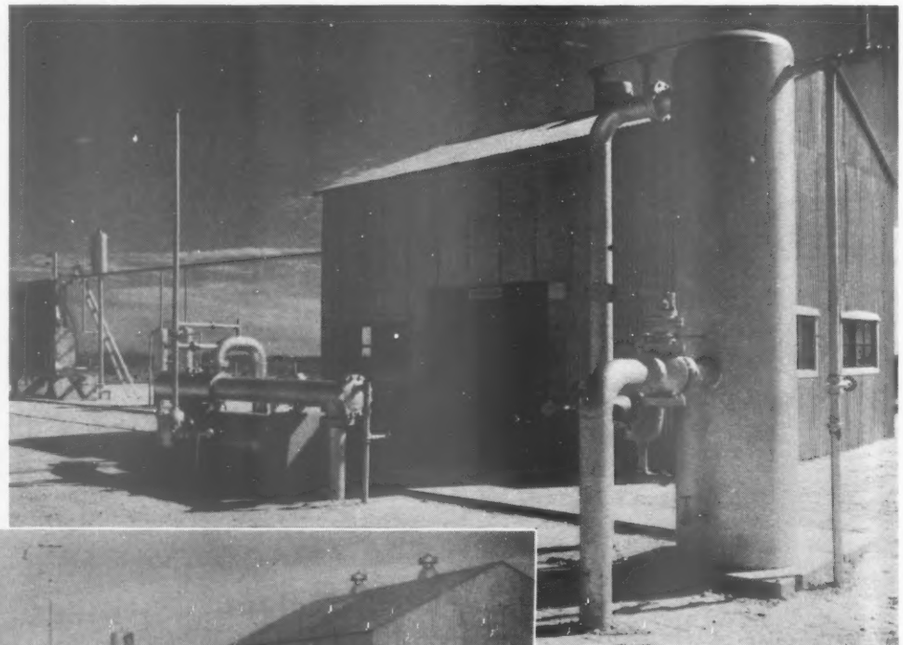
Operators in the Loco Hills field of New Mexico have agreed on a pressure-maintenance project for the entire field, which has a proven area of about 7,500 acres with over 150 producing wells at present. Plans for the plant have not been announced, but it is probable that the plant will be financed by the operators themselves with all gas being unitized. Since the field's main sand pay tends to lens out upstructure, with water present downstructure, the project is expected to be feasible.

SUMMARY OF WEST TEXAS PRESSURE-MAINTENANCE OPERATIONS

Company and field—	Producing wells	Injection wells	Daily injection volumes (cu. ft.) Maximum	Daily injection volumes (cu. ft.) Average	Injection pressures (lb. sq. in.) Maximum	Injection pressures (lb. sq. in.) Average
Illinois Oil Co., Kermit	14	2	1,600,000	450,000	850	700
Gulf Oil Corp., North Ward	8	8	*3,000,000	900,000	600	350
Luse & Ice, Payton	17	3	1,250,000	700,000	1,000	800
Magnolia Petroleum Co., Kermit		7	7,500,000	7,000,000	1,250	800
Monday Oil Co., Kermit	12	4	1,700,000	800,000	700	510

*Gas taken from two gas wells in North Ward.





Above: Monday Oil Co.'s booster plant in the Kermit field, at which some 800,000 cu. ft. of gas is being compressed to 700 lb. for return to four input wells. Left: Luse & Ice's repressuring plant in the Payton field of northern Ward County. From 150,000 to 300,000 cu. ft. of gas is being returned daily to each of three injection wells at input pressures varying from 425 to 1,000 lb.

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Salt-Water Injection in East Texas at Important Stage

By GEORGE WEBER

Injection of salt water in the East Texas field has increased to the point where over 52,000 bbl. daily are being returned to the Woodbine sand through 34 input wells on the west side of the field. This volume represents about 25 per cent of the total water production of the entire field and is sufficient to affect favorably the trend in bottom-hole pressures.

SALT-WATER injection in the East Texas field has passed the stage of primary experiment and is now in full operation. The return of salt water to the Woodbine sand has found rapid acceptance among major operators, as a means of disposal, and volumes currently returned are sufficient to affect favorably the bottom-hole-pressure trend.

This work performs two important functions: It solves the aggravating problem of disposing of increasing salt-water production and at the same time tends to nullify the withdrawal effect of the fluid from the Woodbine sand. During the past year, the increase in salt-water injection has kept pace with the increase in water withdrawn from the reservoir, as shown in the accompanying chart. With further application of this disposal method, East Texas net water withdrawals may soon reverse the upward trend and begin to decline.

During January 1941, a total of 1,608,218 bbl. of salt water was returned to the Woodbine sand. This was handled through 34 injection wells located on the west edge of the field and serving a total of 1,066 field wells producing salt water with oil. Based on the latest salt-water report of the Texas Railroad Commission, dated November 1, 1940, this returned salt water represents about 25 per cent of the total January water production of the entire field. As compared with an estimated 10.5 per cent injected a year ago, the advances made during 1940 are seen to be substantial, resulting in a marked effect on the field's production economy. Wells tied into injection systems during January averaged about 70 per cent salt-water production, indicating that the withdrawal effect of many of the worst offenders is now being nullified. The wells represent about 22 per cent of the total wells making water, as against 25 per cent of the total field water production.

Early Injection Studies

Early salt-water encroachment in East Texas served to warn operators that disposal problems of considerable magnitude lay ahead. Accordingly, engineers studied alternate methods to local surface disposal, which, it was realized, would one day fail to cope with increased water production. Injection to the Woodbine and other subsurface strata was recognized as an ideal solution, but costs and adaptability were unknown factors. The preference for injection to the Woodbine was obvious.

In June 1938, after considerable experimenting by several companies, the first injection system was placed in operation by the Sun Oil Co. at the south end of the field. The results obtained in this and subsequent projects were instrumental in widespread adoption of injection. Early experiments dealt with several variations of the injection method. Both open and closed systems were tried. At one time the drilling of a string of wells west of the producing limits was contemplated. Tests employing wells on the south edge of the field, either former producers or specially drilled wells, were made. Some experimenting was done in injecting salt water to the lower section of the sand, in a well which was kept on production through the annular space, employing a packer below the oil section.

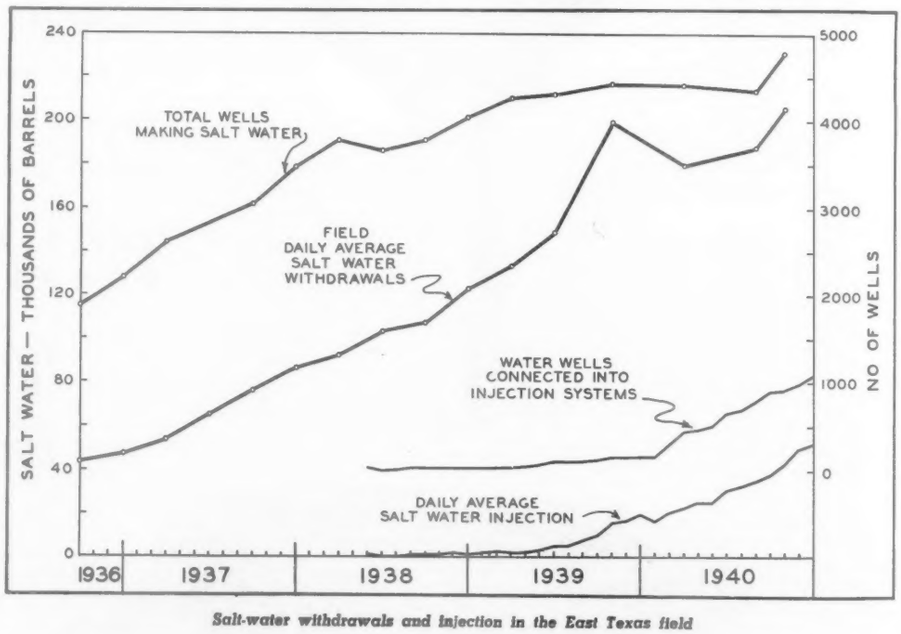
Out of this diversified investigation, the open system of handling salt water at the surface, and injection into reworked, specially equipped input wells has evolved as the most generally accepted method at the present time. Salt water is gathered and passed through stepped-trough sections, accomplishing sufficient aeration to cause precipitation of iron oxides. Settling tanks are provided to remove much of the solids, and filtration after settling renders the salt water sufficiently free of solids to prevent clogging in the sand.

The Sun unit, with the longest service record, 32 months, is still in operation, injecting salt water at a vacuum, after having handled over 2,000,000 bbl. of salt water. Another unit, operated by Sinclair Prairie Oil Co., has injected over 2,200,000 bbl. The largest current capacity of the systems in the field, is made by a well taking an average of 5,000 bbl. daily.

To date over 15,000,000 bbl. of salt water has been injected. The January rate of 51,878 bbl. daily, while still only a quarter of the field's water production, represents approximately the total daily average oil production of Michigan, Pennsylvania, Duval County, Texas, or Midway-Sunset, California.

Operating Problems

Of the 34 injection wells in use during January, most were taking water at a vacuum, with no well-head pressure required to force the salt water into the formation. In some cases, however, pressure is required, sometimes temporarily to "break down" the formation, after which lower pressure or gravity is required for flow. Building up of back pressure has been combated in several cases simply by back-washing or flushing and swabbing the wells to remove what is believed to be filter cake on the face of the sand. This is apparently caused by bacterial action, or in some cases possibly lack of sufficient settling time at the surface. Longer settling time has improved operations and treating in others. Treating is restricted mainly to the use of chlorine, alum, or lime for bacterial control, and it has not been found necessary in all cases.



Salt-water withdrawals and injection in the East Texas field

In addition to the open systems now employed in the field, two closed systems were placed in operation during February. They will operate with slight pressure carried on all surface vessels, to prevent intrusion of air and consequent formation of solids which clog input wells. One of the new units will add the precaution of filtering the salt water before injection.

To February all injection operations had been carried out by 10 major companies in the field. The two closed systems have been installed by independent operators, marking an important step in field-wide injection work. A cooperative project, which will include many smaller operators, is now under consideration.

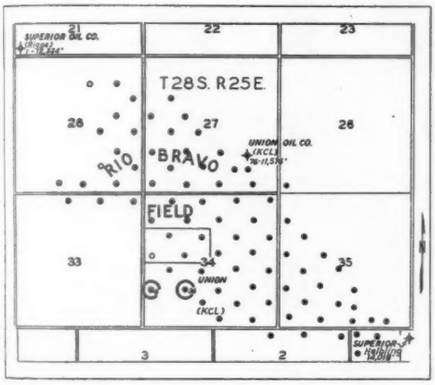
California Operators Set Fast Drilling Time

By L. P. STOCKMAN

SPEED records for drilling footage and reduction of drilling time from spudding to completion are being set by California operators with such frequency that it is difficult to keep step with the fast-moving panorama. Recently, Shell Oil Co. established a new speed record in the Ten Section field and Union Oil Co. set a new speed record for operators in the Rio Bravo field.

The former, in the phenomenal time of 20 days total elapsed drilling time from spudding to completion, completed 54-29-A Kern County Land in the Ten Section field flowing 2,487 bbl. of clean 33.4-gravity oil and 2,270,000 cu. ft. of gas daily from the Stevens zone with bottom of the hole at 8,235 ft. This is the fastest drilling time ever recorded in the Ten Section field. It exceeds by 3 days the previous drilling record of 23 days, which was set in the drilling of 52-30-A Kern County Land in September 1940.

In the new record holder, the N point was logged at 7,487 ft. and top of the productive



Map of Rio Bravo field showing location of 6-34 and 36-34 Kern County Land, the record-breaking wells of Union Oil Co. and also location of Superior Oil Co. 1 Riggs at northwest end of field and 1 Helbling of same company in southwest end of structure. These two wells and 76 K.C.L. of Union have been abandoned as dry holes at depths noted

Stevens oil sand was found at 7,810 ft. The hole was finished with the 4½-in. tubing used to drill the well, plus the addition of the perforated section in the bottom of the hole. This drilling tubing becomes a combination oil string when it is cemented through perforations on top of the oil sand and perforations are opened opposite the productive zones. Production is through 2-in. tubing.

The casing program for Ten Section consists of 990 ft. of 8⅝-in. surface casing, or other comparable surface pipe, plus the combination string and 2-in. tubing for wells drilled with tubing as drill pipe. All present work for Shell in the Ten Section field consists of slim-hole drilling, 12 wells having been completed by this method to date.

Rio Bravo Drilling Record

Union Oil Co. set its first speed drilling record in the Rio Bravo field in January 1941 when it drilled and completed 36-34 Kern County Land at 11,444 ft. in 34½ days total time from spudding to completion. This well is the present record holder as far as total elapsed drilling time is concerned, but 6-34 Kern County Land in the same section recorded faster time down to 11,000 ft. The latter well is located relatively close to the edge of the structure and consequently the company took more time in testing the productive zone.

The 36-34 Kern County Land, record holder at least as far as drilling time from spudding to completion is concerned, reached 10,000 ft. in 20 days whereas 6-34 Kern County Land reached 10,050 ft. in 17⅓ days total elapsed time. The former passed the 11,000-ft. mark in 31½ days, but 6-34 Kern County Land attained 11,100 ft. in 26 days and 6 hours.

The casing program in the Rio Bravo field consists of from 1,500 to 2,000 ft. of 12¾-in. surface pipe and a water string which may be either 6⅝, 7, or 7⅝ in. in diameter. The liner, which is governed by the size of the water string, varies from 4¾ and 5 in. to 5¾ in. in diameter. The tubing is 2½ in. Union 36-34 Kern County Land averaged 500 ft. of hole per day down to 10,000 ft. and 6-34 Kern County Land averaged 571 ft. daily. This time includes that spent in landing and cementing the surface pipe. The former averaged 423 ft. per day down to 11,000 ft. and the latter showed an average of 423 ft. daily down to 11,100 ft. This indicates that the time down to 11,000 ft. was approximately the same, although 6-34 Kern County Land had a shade the better as this depth was reached in slightly less than 26 days. No time was recorded when the 11,000-ft. mark was reached in 6-34 Kern County Land, the time being computed at 11,100 ft.

In the Ten Section field, Shell Oil Co. showed an average of 412 ft. per day total elapsed time in 54-29-A Kern County Land, which was finished at 8,235 ft., but it must be remembered that in this 20 days the company landed surface pipe, a combination oil string and 2-in. tubing and had the well on production in 20 days. The actual footage average was about 451 ft. daily exclusive of time spent in cementing.

(Continued on Page 44)

Right: Stabbing 7-in. casing on 36-34 Kern County Land in the Rio Bravo field. Below: View of rig on the 36-34 Kern County Land, which was drilled and completed at 11,444 ft. in 34½ days total time from spudding to completion

WHAT IS THE POINT *of Sawing Customers in two?*

HOW MANY "half" customers have you had this week? And, while we're on this subject of "half" customers, why don't you do something about them?

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Maintenance and Operation Of Rotary Drilling Lines

By HARRY F. SIMONS

This concluding article of a series on wire rope used for drilling lines in the oil industry discusses steps that may be taken to prolong the life of lines and at the same time gain better rope performance. Other articles of this series dealt with the selection of the proper type line (Jan. 23), factors which affect the wear of the line (Feb. 6), and proper methods of installing wire rope (Feb. 20).

THE fact that no money is being made by a rotary drilling rig when the bit is off bottom has led drillers to operate the hoist at maximum speed while making a trip. The later-type rigs are capable of high drum speeds and have a capacity for over 6,000 ft. per minute.

Often such speeds lead to many complications which affect the efficiency and service of the wire rope. About 4,000 ft. per minute is the maximum speed at which the line will spool smoothly and evenly, and when this rate is exceeded there is danger of balling up and overlapping on the drum, particularly if the blocks are not loaded. When the line is overlapped there is considerable danger of snapping the line in two as a succeeding coil may be completely over a coil which must come off the drum first (sometimes called scrubbing). This condition may be so bad that the blocks will not pull the line off the drum even though they are heavily loaded. Most drillers, when they note the line overlapping, will back the blocks down and start over again, using a slower speed. In addition to the danger of actually freezing the line, the sliding of the coils across each other will result in severe burning and breaking of the wires in the strands.

Running long strings of pipe in the hole at high speeds is also dangerous, for in case the bit strikes a shelf, or tight place, in the hole, the line will continue to unreel until the drum rotation is stopped by the driller applying the brake. If the pipe then becomes free it will drop until the slack is taken out of the line. The momentum of the drop may exceed the breaking strength of the line if too much slack was run off the drum. A preformed line has greater flexibility and less tendency to twist under light loads and high speeds.

In addition to the more dangerous conditions caused by poor spooling as a result of high speeds, there is the flexing of the line to be considered. Each time the line passes over a sheave it is bent twice, once when it conforms to the circular pattern of the sheave and again when it straightens out. When this flexing is done at high speed, the sliding of the strands across each other is much more severe as the time of adjustment is shortened. Fatigue breaks may therefore be expected on the inside of a line which is run at excessive speeds.

There is also the rubbing of the line against the guard of the traveling block caused by excessive speeds and swinging of the blocks. This is often found on small rigs which have large engines capable of developing high speeds while the traveling block is comparatively light. As the fastline sheave on the traveling block turns six times as fast (assuming six lines through the block) as the slowest sheave, the blocks have a tendency to climb on that side and become misaligned. All of the lines through the block then rub the guard with serious abrasion resulting.

Drum Crushing

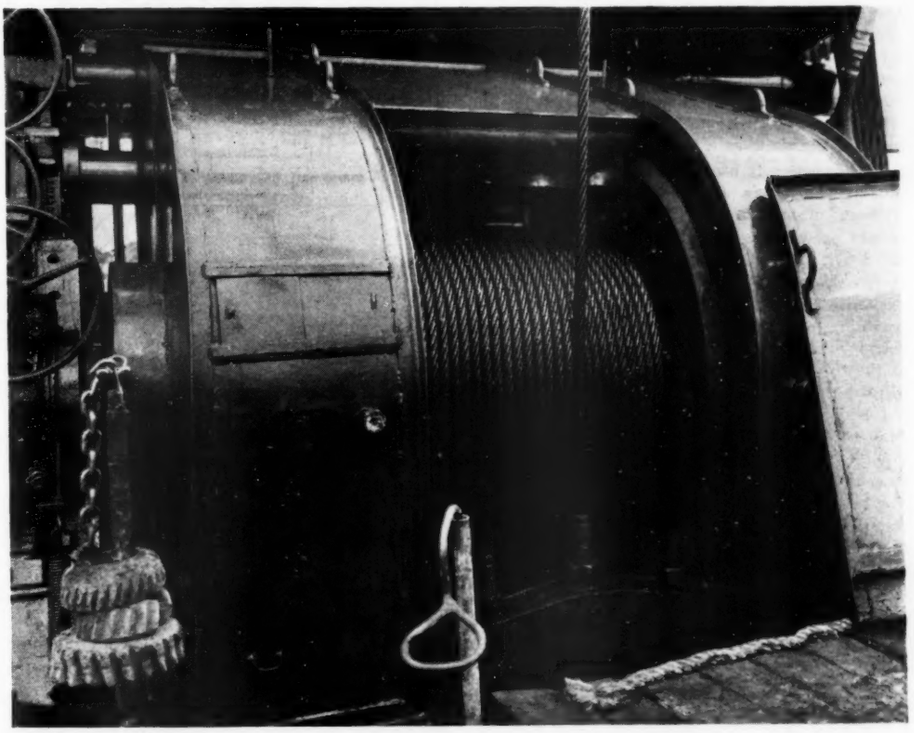
One remedy is to enlarge the openings in the guard but this also reduces the guard's efficiency in preventing accidents. A better practice is to run the hoist a little slower, the increase in time required to run the blocks from the floor to the fourble board being more than compensated for by the greater efficiency of the crew.

If all other conditions are at an optimum, the severest wear on the wire rope takes place on the drum where the pressures exerted are the greatest and where each layer and coil of line rubs against the preceding layer and coil. The first layer is the one receiving the most abuse and after a period of time will flatten. If this condition is allowed to continue, succeeding layers will flatten and be weakened; also as this flattened line passes over the sheaves, it will cut them badly.

There is also another point of extreme wear on the drum which must be considered. The rope follows the grooves formed by the coils underneath except at the cross-over point. For each revolution the rope feeds back one groove, or depression, and then at the cross-over, jumps ahead. Each coil therefore crosses the corresponding coil on the preceding layer.

The result is a concentration of wear at these points. (See Fig. 1.) This can be noted if a line, which has not had its position on the drum changed during service, is inspected closely. There will be a succession of weak spots, evidenced by broken wires and flattened cross-section, at regular intervals which correspond to the circumference of the coils. A discussion of the points of wear other than on the drum was given in a preceding part of this article and it was seen that by moving new portions of the line into the sections of concentrated wear, the entire wire rope could be made to wear smoothly. Drum crushing is another reason for changing the position of the line and it determines just what relative position the line shall assume in its new spooling.

The practice is to move line onto the drum whenever it is needed, the worn portion of the fast line thus being placed on the drum and the other worn spots being moved from the points of wear. The approximate length of the line to be moved depends on how bad and how long the



A 1¼-in. wire rope spooled on a drum of a rotary rig drilling below 14,000 ft. An auxiliary hoist was also rigged up on the job and it was an easy matter to change position of the drilling line whenever wear became evident at the crossover points

worn spots are. The change in position of the wire rope should be made when the wires in the rope begin to show displacement.

In deep areas, such as the Gulf Coast and California, the practice is to move a few wraps on to the drum once a week or oftener and after the accumulation on the drum becomes too great, remove the line from the drum and cut some of it off. In shallow areas, such as Kansas and Illinois, the cutting off may only be needed after each well or after several wells have been completed.

In cutting a new line an even number of coils or half coils should never be removed. Rather, the amount of line cut off the drum should be so many coils and a fraction of a coil, one-fourth and three-fourths being the best. This changes the portion of the line at the major and minor crossover of each coil. Cutting on the even or the half coil will not change the crossover points and part of the purpose of changing the position of the line will be defeated. The periodic and systematic changing of the wire rope's position on the drum is the most important means open to the drilling contractor of lengthening the life of the drilling line.

Swapping Ends

By buying a longer wire rope than is necessary to string up the blocks and allow for cutoffs, an additional economy may be obtained by changing the ends of the line. The fast line thus becomes the dead line while the original dead line is placed on the drum. The one-half of the line which has seen the least service, some of which has never run over a sheave, is thus moved into position where strength in it can be utilized and it can be handled the same as a new line.

This practice is used widely on the Gulf Coast and in deep areas. On some rigs it can be done without unstringing the blocks, on others the blocks need to be partially unstrung and on the third-type crown the blocks must be unstrung and then restrung. The procedure for swapping ends without unstringing the blocks is simple. The traveling block is hung on a special bridle in the corner of the derrick and then some slack run off of the drum. The catline or a winch line is used to raise the crown and turn it half around, following which the dead line and fast line are interchanged.

Oiling a wire rope in service is not a difficult task as the oil can be applied with a brush to the line on the drum or the line can be run through the oil. An oil thin enough to penetrate between the strands is used; ability of the oil to get into the center of the rope will be increased by heating before application. Crude oil and kerosene have a harmful effect on the line as they remove much of the lubrication qualities from the oil.

By using the best-grade rope available in the proper size, the largest safety factor possible will be present. The danger of damaging the line due to overloads is thereby lessened and the working margin increased. In many cases the safety factor with lines of lesser quality and size is practically nonexistent, particularly if any unusual circumstances arise during the drilling of a well. If any doubt exists when selecting the size line to be used, anticipated loads should be increased by 15,000 to 30,000 lb. to allow for all contingencies.

Load New Line Lightly

When a new wire rope is being placed on a drum or the ends of line already in service are being swapped, the new rope or the new section should be loaded gradually and should see as much mild service as possible before it is subjected to heavy loads. The practice is to pull all but 10 or 12 stands of pipe (manufacturers recommend the former while drillers generally use the latter) from the hole and then perform the changeover. The

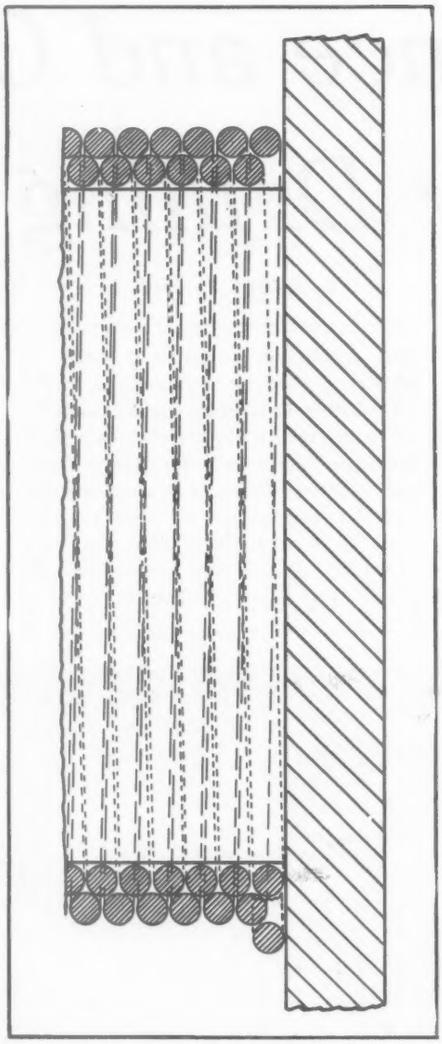


Fig. 1—Diagram of crossover of coils of wire rope spooling on a rotary drum. The wear on the line is concentrated at these points and when changing position of the rope, care should be taken to move the crossover point

wire rope thus has ample time to adjust itself before it is loaded heavily.

In cases where a new wire rope is put on during the efforts to free stuck drill pipe, there is no opportunity to load it gradually. Running the blocks empty for a time is some help, particularly if a back pull can be put on the blocks with a catline. In such cases new lines sometimes fail at lesser loads than have been placed on the old line. Generally it is found that failure to break the line in, bad sheaves or bad spooling is the cause. When pulling on pipe the position of the line on the drum should be noted and if the point of maximum strain coincides with the crossover of the coil on the drum, the pull should not be made until the line has been moved. If the line is not moved, it will be flattened and its breaking strength reduced.

Twisting Blocks

New wire ropes will often have a tendency to twist the traveling block due to the unbalanced stresses remaining as a result of the closing operation or due to an accumulation of lay during the stringup. Nonpreformed lines have a greater tendency to twist than do preformed lines.

The twisting of the blocks can be easily eliminated by relieving the stresses in the line through the application of what the driller calls "back-twist." Actually, the blocks may be twisting either with the lay or opposite to it. The procedure is to lay the blocks down or clamp the two fast lines together so the dead line can be unclamped. The dead line can then be twisted to relieve the strain in the line. A simple rule is to twist the dead line the same direction that the blocks are twisting; blocks twisted right, twist dead line right.[7]

There is little or no damage accruing from the twisting of the line to prevent twisting of the blocks. Such damage as does occur is slight in comparison with that done to the line by twisting, particularly if the blocks have to be loaded heavily to get them to untwist.

Kinks

More obvious damage to lines includes kinks, core-popping, mashing, overloading and stranding. Kinks are the result of careless handling while core-popping is due to careless operation and mashing may be due to either or both. Overloading may at times be necessary. A kink or mashed line will show distortion, even under load, and a line with a broken core will generally be recognized by some of the hemp fragments protruding through the strands and a reduction in diameter. Overloading will cause a lengthening of the lay, a loss in elasticity of the line and a reduction in diameter. Stranding is a severe case of overloading in which one of the strands is permanently deformed and will stand out from the rest of the line.

Determining Time to Replace Wire Rope

The proper time to replace a wire rope depends on its past history and no rule can be set forth as to just how much service should be obtained from a line or when the line is no longer safe. If the line has been kinked, it is obvious that it will be unsafe after comparatively short service. The same is true of the rope which has been mashed. Core failure occasionally takes its toll. Stranding, or unstranding, of the rope due to overload weakens the line materially.

If any of these are present they can be found by visual examination. At times examination is not necessary as the bad spot practically jumps out at the driller each time the drilling line is spooled and unspooled.

A decision to retire a drilling line must be based on the remaining strength of the wire rope as indicated by the broken wires present, abrasion, reduction in rope diameter, and corrosion in the worst rope lay. Often the way a rope stretches, or fails to stretch, under load will indicate that the rope should be inspected to see if it should be replaced. Deterioration is often very rapid after the rope loses its elasticity.

When a wire rope is first placed in service it will wear rapidly until a working surface, or contact area, to meet the requirements is formed. Excessive wear is usually caused by pinching sheaves. Abrasion following this will be slow if the proper rope is used with the proper equipment. The first appearance of broken wires need not be a cause for alarm but when broken wires begin to develop rapidly it is time to consider retirement.

Because of the risk to human life and property involved, it is considered dangerous to run a rope having a safety factor less than 3.75. This represents 75 per cent of the strength of a wire rope having a safety factor of 5 when installed. Some wire ropes have a greater safety factor than this when new and consequently they can be used with a lesser per cent of the remaining strength.

Exactly when 25 per cent of the strength of the

(Continued on Page 44)

7. The Oil and Gas Journal, July 4, 1940, p. 35.

. . . TO BUILD THIS NEW MOTOR

2
Extra Protection
AGAINST ELECTRICAL BREAKDOWN

Stator winding of Formex* wire—the toughest magnet wire ever developed—gives extra protection against moisture, oil, abrasion, and heat-aging. New synthetic-resin bonding varnish and Glyptal No. 1201 Red on end windings make a sturdy unit with a durable finish. You get a motor you can count on for continuous service year after year.

*Reg. U.S. Pat. Off.

3
Extra Protection
AGAINST OPERATING WEAR AND TEAR

Sleeve bearings are of new design—have a scientifically determined length and diameter and a method of grooving that assures a continuous oil film over the entire bearing surface. A new and simple ball-bearing mounting assures correct alignment and exclusion of foreign materials—bearings can be cleaned and greased without disassembling.

OUR field studies had shown that, more and more, the requirements of industry were demanding a vastly improved general-purpose motor, and it was apparent that this demanded a radically new approach on the part of the designer. Similarly, design studies showed that only by making a fresh start could full advantage be taken of the materials and methods that were newly available. Only by matching up *all* the new wants and *all* the new ways of doing things, in a supreme effort to make a *long jump* ahead—instead of the traditional *step* ahead—was it possible to achieve the truly modern motor you asked for.

And now you have the Tri-Clad motor—a completely new design. More than 15 important improvements have been built into it. And for the reason that so many major improvements were concentrated in one design, we had to have just that much more assurance that each one was thoroughly practical. Never before, we believe, has the manufacturer required a motor to prove itself so thoroughly in advance of initial sale.

Whatever the task you have for a general-purpose motor—whatever your special concern for appearance, convenience, quietness, *or* protection—you will find that the performance-tested features of the Tri-Clad motor will give you specific benefits on the job. General Electric, Schenectady, N. Y.

Integral-hp sizes up to 20 hp (at 3600 rpm), open and splashproof, are now available. Also capacitor motors up to 5 hp (at 3600 rpm).

GENERAL ELECTRIC

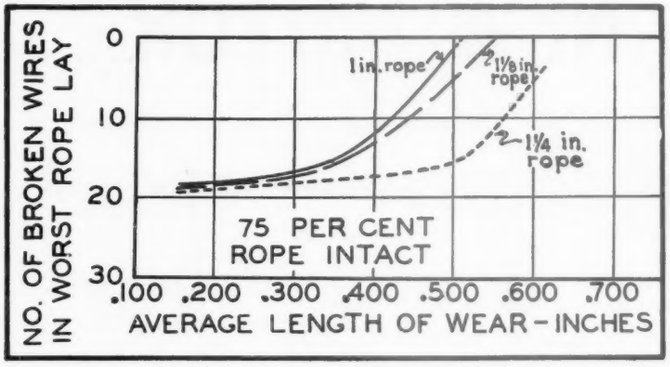


Fig. 2—Graph showing the number of broken wires and length of wear when 75 per cent of the rope remains, in three sizes of drilling lines (1, 1⅛ and 1¼-in.) most commonly used

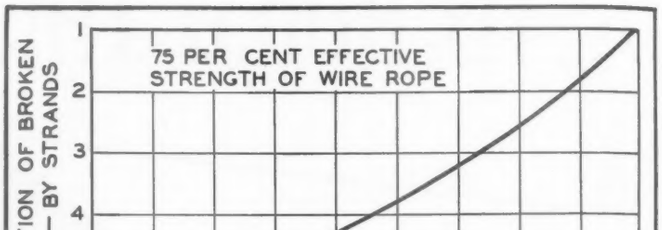

DISTRIBUTION OF BROKEN WIRES — BY STRANDS
1
2
3
4
5
6
75 PER CENT EFFECTIVE STRENGTH OF WIRE ROPE
75 76 77 78 79 80 81 82 83 84
PER CENT STRENGTH — BASED ON WEAR AND NUMBER OF BROKEN STRANDS

Fig. 3—Effect of distribution of broken strands on remaining strength in a wire rope

(Continued from Page 40)

rope is gone is very difficult to determine. There are numerous reroping charts presented by some manufacturers but none dealing directly with the drilling industry although those given for the mining industry are close.

Such charts are based on the actual measurement of the length of the worn wire surfaces, the number of broken wires and the distribution of the broken wires in the strands in the worst lay in the rope. (A lay is the length of rope in which one strand makes a complete revolution around the core.)

An accompanying chart (Fig. 2) shows relation between the permissible (75 per cent of original strength remaining) combined effect of the number of broken wires per rope lay and the total wear as represented by the length of the worn surface on individual wires for the three sizes of wire rope most commonly used for drilling lines. However, this chart does not include a factor for the distribution of the broken wires in the strands.

The distribution of the broken wires in the strands has considerable effect on the remaining strength as can be seen by glancing at Fig. 3. The graph shows 75 per cent effective remaining strength in a wire rope when the distribution of broken wires by strands is plotted against the apparent remaining strength as shown by a count of broken wires and the wear on the wires in the worst rope lay. It is seen that when the breaks are evenly distributed the effective remaining strength is the same as the apparent remaining strength but when the breaks are concentrated in a few strands the apparent remaining strength must be considerably higher to have the desired effective remaining strength.

The simplest way to obtain all the necessary information for estimating the remaining strength is to count and list the broken wires by strands. Wire Engineering presents several reroping charts for different types of rope for use in other industries. These may be used for the construction of charts for wire ropes used in drilling service.

Reroping charts can be used in connection with inspection data to estimate the remaining effective strength of the rope, and after the rope has been discarded the worn section can be tested to destruction to determine whether any allowance should be made for internal wear. In this manner it is possible to learn whether the maximum service is being obtained and whether a lesser or greater safety factor exists for the apparent condition of the wire rope.

Comparing Service

Comparison of service can be best obtained by using the A.P.I. form for the compilation of ton-miles to which each line is subjected. From 7,000 to 10,000 ton-miles is considered good service. The Drilling Equipment Directory presents a chart which provides an easy method of estimating the ton-miles per round trip for different sizes of drill pipe and various depths. The chart is based on the formula:

$$\text{n-miles per trip} = \frac{WL(1 + L) + 4LM}{5{,}280 \times 2{,}000}$$

Where:

L = depth of hole
W = weight of pipe per foot in pounds
M = weight of traveling block in pounds

This chart gives ample data for comparing service of lines on the same rig operating in an area of fairly uniform depth. It cannot serve as a basis of comparison for wire rope used on different rigs and under different conditions as it leaves out any allowance for acceleration or deceleration while the blocks are heavily loaded.

A complete formula should include factors for the weight of the mud, the number of lines strung up, acceleration and deceleration. Its application should be as easy as the simpler formula which leaves these important factors out and it would serve a greater purpose as it would then be possible to compare wire-rope performance over a wider scale.

American Petroleum Institute Standards No. 9A, tenth edition, presents a slightly different formula and a different chart. In this, the Anderson formula has been changed to include the work done by the wire line during the normal cycle of operations in drilling. This formula includes everything but the work placed on the line by the acceleration and deceleration of the drill pipe while making a trip. While this is a good basis for comparing performances, it also falls short of providing an absolute evaluation of the work done by the wire rope during the drilling of a well.

Records

While the processes by which wire ropes are made are all similar, the results are not necessarily so. The quality and the life of the line will depend not only on the materials used but on the skill of the men manufacturing the line. Life of different makes of line will vary widely and can only be determined by experience. There is also the variation of service to which the line is subjected and one line may be more satisfactory for a particular job than another.

To determine the best size and make of line for particular purposes, some drilling contractors and oil companies keep wire-rope records recommended by the A.P.I. and found on Page U-4 of the Drilling Equipment Directory. Continual use of such records will reduce the wire-line costs of the operator, not only by helping in the selection but by indicating the proper time to replace the wire rope.

California Operators Set Fast Drilling Time

(Continued from Page 37)

The fastest drilling time on record was made in the Wilmington field of Los Angeles Basin by the Kern Drilling Co., which on a night tour made 1,595 ft. in 8 hours for an average of 199.3 ft. per hour. A depth of 2,713 ft. was reached in 40 hours and this included an electrical survey, directional survey, mud conditioning and running casing which consumed 14 hours. This record was established in the drilling of 2 Harbor of Sound Petroleum Corp. The 40 hours drilling time to 2,713 ft. also included the landing of 8⅝-in. casing as a water string at 2,710 ft. Actual time on bottom of the hole approximated 25 hours as far as actual drilling is concerned.

The 2 Harbor of Sound Petroleum Corp. is not necessarily the fastest completion as far as elapsed time from spudding to completion but it is the fastest time on record down to the top of the Ranger zone. This well was finally completed in 14 days total elapsed time down to 3,100 ft. The casing program included 105 ft. of 16-in. surface casing, 2,710 ft. of 8⅝-in. casing as a water string, 450 ft. of 5½-in. gravel-packed liner at 3,099 ft. and 2,760 ft. of 2½-in. tubing. The well failed to result in a natural flow and it was necessary to install pumping equipment, which time is included in the total elapsed drilling time.

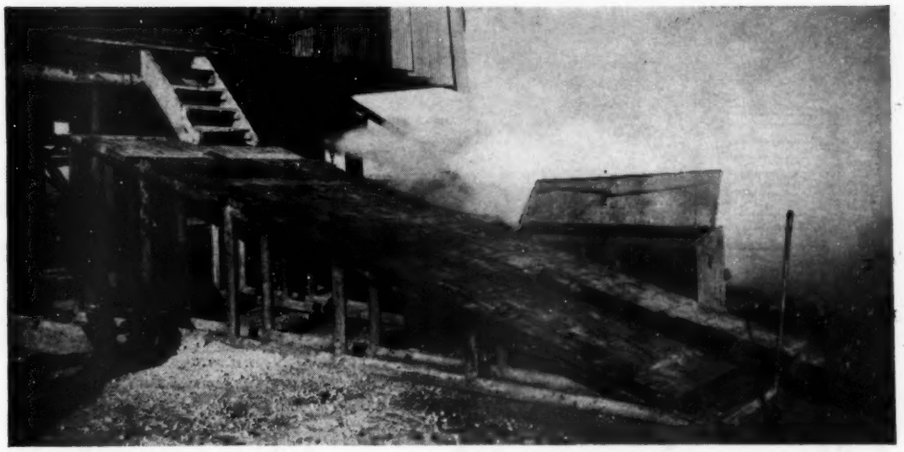
The significance attached to these fast time-drilling records lies in the fact that they were made during the course of work and the time factor was therefore of an incidental nature. Early in 1940, Continental Oil Co. set a new speed record in the drilling of 5-8-A Kern County Land in the Wasco field, but that record, which appeared as close to perfection as possible, has been exceeded by the Union's drilling achievement in the Rio Bravo field.

Continental drilled 13,157 ft. of hole in 5-8-A Kern County Land and landed 12,878 ft. of 6⅝-in. casing in 60 days. This well reached a depth of 10,000 ft. in a total elapsed drilling time of 21 days and had logged 12,000 ft. of hole in slightly less than 40 days after spudding. In 51½ days Continental's drilling department, under the supervision of A. H. Bell, had landed 995 ft. of 13⅜-in. surface pipe and cemented a 6⅝-in. water string at 12,878 ft. It required a little over 9 hours to run in and land the 12,878 ft. of 6⅝-in. casing.

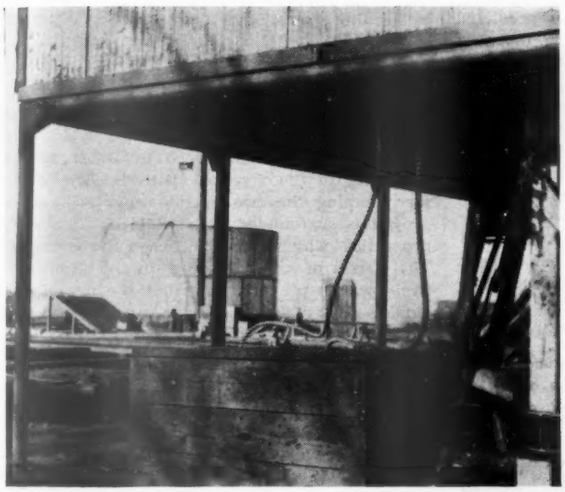
The best previous drilling record was 32 days total elapsed time to 10,000 ft. and 53 days to 12,000 ft. Continental's field department took 62 days to reach 10,000 ft. in its first well at Wasco and at that time this represented the fastest time to that depth.

Supports for Derrick Ramp

In West Texas where much of the drilling makes use of 8-ft. substructures under the derrick and engines, ramps of some type or other are generally used to permit loading or unloading of trucks direct from the derrick floor. Here is shown one of the most successful and long lived of the various types used. Double rows of used 6-in. pipe on each side form the foundation, connected to double rows of inclined pipe by closely spaced uprights. The structure is floored with heavy timbers. Due to its rugged construction the rack can be shifted from location to location without its being damaged.



Operating Ideas



Weatherproof Box for Rope Bales

The problem of maintaining a dry, clean supply of new derrick and catline manila rope available on the rig floor has been solved by one company by placing it in a sturdy wooden weatherproof enclosure beneath a dry corner of the draw-works portion of the rig floor. The box, measuring 3 by 6 ft. and 3 ft. high, is fitted with a hinged cover in which two holes have been bored. The rope ends from the two bales are passed up through the cover and on up through two similar holes in the derrick floor. A hitch or loop in the ends of the ropes keeps them from falling back, and out of the way in a little used corner of the derrick floor. Any length of rope is immediately available for replacement, especially should the one in use suddenly fail at some critical time during the drilling or pulling operations. Moving from one location to another is also simplified, as the box containing the bails can be picked up as a unit, and moved to the new location where the rope will be immediately available for use during rigging up.

Slotted "Big Inch" Protects Mud Float

A sleeve of slotted "big inch" pipe, set around the float used with a recording mud gage on the pit serving the slush-pump suctions permits the mud to reach the float without creating currents which would tend to give false readings. By cutting the slots at varying levels, a mixing effect is created by the slow currents entering and leaving at various levels. The mud within the cylinder is thus kept at the same density as the remainder of that in the pit. Board walks spanning the pit permit inspection of the float and changing of the charts.

Pipe Sleeve Anchors Draw-Works End

Wear between holddown-bolt eyes and the draw-works base is taken by slipping a short section of drill stem of the proper diameter through the tubular end of the draw works, and threading the eyes of the holddown bolts over this pipe instead of using bolts with hooked ends to engage the draw-works base itself. This method of tying down permits the draw works to be shifted simply by slacking off on the turnbuckles, and then sliding the drill-stem sleeve far enough to clear the eyes.

Water treating and pumping plant at a water-flood project in the Nowata field

Flowing Practices in Flooding at Nowata

By PAUL REED

A DISTINCTIVE feature of producing oil by the water-flood method in the Nowata, Oklahoma, field is the practice of lifting oil in producing wells by flowing. Up to the time that the water-flood boom started in Nowata in 1936 it had been common practice to pump water-flooded production. This was true of the extensive water-flood operations in the Bradford, Pa., district as well as of the few projects of this kind which were then conducted at Nowata. A large Pennsylvania operator, who entered the Nowata field in 1935, planned and equipped his first projects for pumping. Before the middle of 1937 he had carried on a series of experiments with the flowing of production which demonstrated to his satisfaction that flowing was the most desirable method for bringing oil to the surface. However, neither he nor any other operator resorts entirely to flowing since there are situations existing on parts of certain properties which call for the use of pumping. Before describing these, mention should be made of the two basic policies followed by operators in the field.

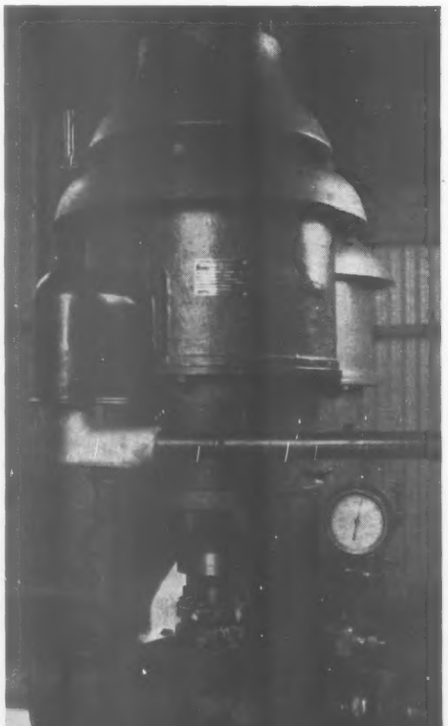
Rapid Production Policy

The policy favored by large operators, especially those having extensive holdings in the area, is to produce a property as rapidly as possible with the intention of removing equipment and using it on later projects. One operator acquired extensive stripper production in the Nowata field 6 years ago which has sufficient acreage to make it possible to develop a new 160-acre water-flood project each year for 20 years. Although this operator has developed new projects steadily each year, he has not adhered strictly to such an arbitrary schedule. For the rate at which new projects have been developed has been determined by the requirements of the operator and local situations existing in different parts of the field.

Effort is made by this operator to standardize as far as possible, the equipment installed for operating properties. Next month marks the end of 5 years of producing from his first project consisting of 157 acres from which more than 6,574 bbl. of oil per acre have been recovered. The property is now flowing about 60 bbl. per day which is approximately what it was producing as a stripper property before flooding began. This is a larger recovery than had been predicted generally by those who were studying the area when the project started. At that time it was believed that the property would be entirely flooded out by now by the methods employed.

With present flowing methods, principal operating expense for the property in the latter stages of the flood's life is the cost of power for pumping water into injection wells. There is no expense for treating and filtering because the water used for injection is brine produced with oil on nearby properties. This brine is injected without treating and filtering under the same pressure used on fresh-water-injection lines on adjacent portions of the flood. Because of the manner in which it is operated this property is commonly referred to in the area as a salt-water-disposal project.

Two 75-hp. electric motor-driven centrifugal water pumps, each handling 150 g.p.m. of brine at 560 lb. pressure for reinjection on a water-flood project in the Nowata field



With the rapid-depletion method of operating water-flood projects, it is possible to return the original investment in the shortest time and to maintain a higher yearly income.

A longer period of water-flood operation is advocated by a number of independent operators. With the longer period of flooding, it is believed that the ultimate recovery will be greater although the yearly recovery may be less. These operators prefer to exploit their resources as effectively as possible. Properties offering the most favorable conditions for water flooding are not readily acquired.

While there has been a growing practice in Nowata toward flowing producing wells, flowing is far from being the universal method for bringing oil to the surface in the area since a substantial part of it is lifted by wells pumped by central powers and electric-motor-driven jacks which were discussed in "Pumping Practices in Nowata Producing Operations," The Oil and Gas Journal, February 20, 1941, Page 42. Wells of some operators are equipped so that they may be readily changed from pumping to flowing and back to pumping when conditions make this advisable. The advantages of flowing during the last stages of flooding are becoming more widely recognized. Pumping of oil in the early stages is favored by most operators because of the larger amount of oil which can be lifted by this method in flooding operations.

Inside Wells Flowed

One operator, who strongly favors flowing, pumps the two outside rows of wells on a large project where he flows the inside wells. The property has been developed by 330-ft. spacing according to the five-spot pattern. The reason for pumping the two outside rows is that the project is surrounded on all sides by producing properties which have not been water-flooded. The effects of water-flooding cannot be held entirely within property lines but the pumping of outside wells makes it possible to exert some control which will retain the benefits of flooding as far as possible for the flooding operator. This practice of pumping line wells and flowing inside wells is followed on several projects in the field.

In another part of the Nowata field, this same operator is considering a scheme for protecting his property lines by a procedure which is directly opposite to the one just described. He has devised this scheme while planning the extension of his operations to properties in the vicinity of leases now being flooded by him. The boundary lines of one of these projects under consideration will abut the producing property of a neighbor on two sides; the contact is along L-shaped lines. He has proposed to the neighbor that input wells be drilled along the common boundary which will be owned 50-50 by the two operators. The first operator proposes to sell his neighbor treated and filtered water for a limited number of wells along the common boundary. This water is to be furnished from his plant which has been operating nearby for several years. If this arrangement is entered into, it will be done with the distinct understanding that oil wells for a distance of 660 ft. back from both sides of the common boundary line will not be produced by flowing. Since the spacing to be employed will be 330 ft. this means that such an agreement, if it is put into effect, will govern two rows of producing wells. With wells flowed by this arrangement it is assured that pressure conditions will be maintained with a uniformity which will be beneficial to both parties.

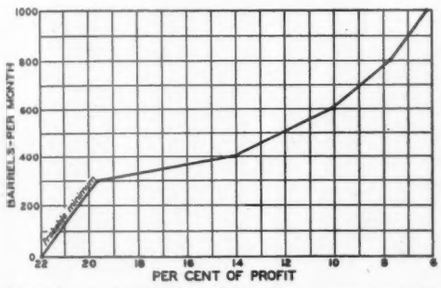
New Lease Management Plan Facilitates Unit Operation

By T. P. SANDERS

UNIT operation, wherein owners of leases in a pool agree to consolidate their properties so that they can be operated as a single block, has many advantages which have long been recognized. If the block covers the entire pool, operation can be regulated for the best interest of greater oil recovery. Purchases can be made in large quantities; and instead of maintaining pumpers, servicing crews, and pulling equipment on each lease, the same producing organization can operate a large area at a considerable saving.

The one drawback always encountered when unit operation is in prospect has been the difficulty of consolidating properties on an equitable basis. For this reason unit operation has given way in many areas to cooperative agreement. Under cooperative agreement the participants agree on such matters as well spacing, proration, and secondary-recovery or pressure-maintenance practice. Each lease owner continues to operate his own properties, and as a result there is no appreciable reduction in lifting costs.

A plan is now being introduced which is designed to bring about the economies of unit operation without making it necessary for the lease owners to pool their properties or even to enter into agreement with one another. The new plan, known as the Hamilton oil-operating plan, has been devised by T. J. Hamilton, Mid-Continent chairman of the American Petroleum Institute, Production Division. It is best suited for small leases where ordinary labor and supervising costs are excessively high because of the necessity of maintaining a complete organization to operate a few wells.



Schedule of charges for oil-property management. By making independent agreements with owners of adjoining leases, a form of unit operation can be brought about

Under the property-management plan the manager takes over the operation of the lease for a per cent of profits. The chart shows the rate-of-charge scale. The monthly production determines what per cent of the profits will go to pay the manager's fee. Thus the manager must increase profits to the lease owner if he himself is to increase his income. The manager acts not only as a consulting engineer, but also employs and supervises labor, sells oil and gas, and carries on all other duties incident to lease operation, including the keeping of accurate accounts. His success depends to a marked degree upon his ability to obtain the operation of a number of adjoining or nearby leases so that he can bring about economies of operation and supervision from which he, as well as all lease holders, will benefit.

It is expected that economies could be brought about in many cases by the manager's use of central-power equipment for pumping a number of leases under different ownership. In other cases, the manager's direct interest in oil-gravity conservation, and other less impressive features of lease operation, would result in very worthwhile economies. The manager would be called on to post conspicuous signs revealing his stewardship of each lease, and thus he would feel bound to uphold certain standards of lease appearance and equipment maintenance.

The outstanding feature of the oil-property management plan is that it will permit adjoining leases of widely varying types of ownership to be consolidated for economic control. For example, adjacent leases one of which is owned by a large oil company, another by an independent operator, a third by a receivership, a fourth by a trust, and a fifth by a women's club, could all be effectively consolidated through independent agreements with the manager.

SAFETY - Hanging Tubing Board Prevents Accidents

EVERY producing well must have the tubing pulled at some time. In many cases, this is a monthly task while in other wells a year or more may elapse before a pulling job is necessary. A tubing unit must be moved in for each job, blocks strung up and other preparations made for the work. In some cases the rigging up of the equipment requires almost as much time as it does to pull the rods and tubing and rerun them.

The installation of the tubing board, the platform on which the derrick man works, does not as a rule require more than 30 minutes. However, there is a great difference in types of derricks used and a tubing board to fit all of them is hard to make. Generally, such temporary tubing boards consist of four or five 2 by 12-in. or 3 by 12-in. planks, either 12 or 16 ft. in length. As the derrick girts are light, the weight of the board must be kept at a minimum.

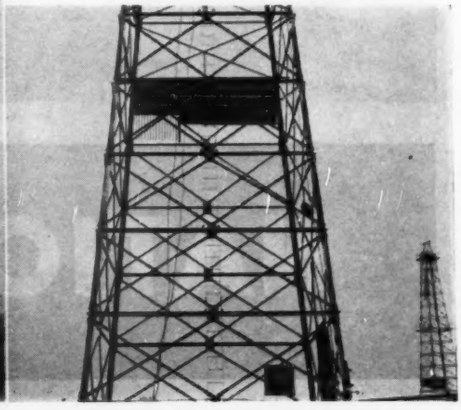
Many operators use a board permanently installed in the derrick. Such boards are made either from old pipe and derrick irons covered with planks or from angle irons covered with steel mesh. To prevent unnecessary deterioration of the wood or corrosion of the steel, the exposure of the board to the elements is reduced by hanging them vertically in the derrick when not in use. When it comes time for a tubing job, it is only a moment's work to raise the board to its proper horizontal position and lock it in place.

This type board is much safer than one composed of several pieces which is installed for each job. It provides a much better working surface, there is less danger of a man falling while working on it and it eliminates the possibility of accident during installation.

This latter is no imaginary phrase. Only recently a fatal accident occurred while a crew was rigging up to pull tubing. The first of the boards had been landed and the derrick man was standing on it while some of the remaining boards were pulled up. The boards being hoisted fouled on the derrick and the board on which the man was standing. In the effort to dislodge them the board already installed and the man on it were knocked out of the derrick.

This particular task is performed often in the oil fields; each day and each time it is necessary a good setting for an accident is presented. While installing the boards it is impractical for the derrick man to wear a safety belt, and a slight miscalculation, a misunderstood signal or a failure of the surface equipment or personnel to perform properly jeopardizes the man's life. He is faced with the problem of clinging to the derrick while fending off a blow and is limited in his ability to protect himself.

All the danger in landing the board can be eliminated by installation of properly designed tubing boards. The saving in time used in rigging up will offset any additional expense and by providing a better working platform, the pulling and running of the tubing will be expedited.



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Walls without Welds

Report of A.S.T.M. Committee D-2 On Activities at Annual Meeting

The January 1941 meetings of the American Society for Testing Materials' Committee D-2 on petroleum products and lubricants, and the meetings of its subcommittees and technical committees, attracted more members than for several years, the society reported in an official account of the meeting.

The subcommittee on pharmaceutical tests has developed a test for carbonizable substances in paraffin and since cooperative testing indicates that it is satisfactory, it will be submitted to Committee D-2 for approval.

The viscosity subcommittee believes that the A.P.I. Alpha and Beta viscosity standard oils should be continued and, possibly, be supplemented by a third oil of low viscosity. It was decided to advise the A.P.I. committee on viscosity accordingly. The subcommittee plans to study the possibility of devising a method which would distinguish between true and so-called "false" viscosity of lubricating oils. This problem has been referred to Committee D-2 by the Society of Automotive Engineers.

Last year the specifications for the distillation condenser were broadened in order to permit the suppliers to design apparatus which did not conform to the conventional type of condenser. At that time the modification was applied to distillation Methods D 86 (distillation of gasoline, naphtha, kerosene, and similar petroleum products) and D 216 (distillation of natural gasoline). Action was taken toward making similar changes in Methods D 158 (distillation of gas oil), D 447 (distillation of plant spray oils), and D 285 (distillation of crude petroleum).

As an initial step in its program, the subcommittee on insoluble content of used oils has circulated 10 methods of procedure for this determination which are now employed in the laboratories of the different members of the subcommittee. The next step in the program is to correlate the best features of the various methods. The subcommittee on determination of sulfur, chlorine and phosphorus in EP lubricants has circulated analytical procedures to its membership for investigation and reactions.

The subcommittee on neutralization number and saponification has found that the results obtained by the use of methyl ethyl ketone in the determination of saponification number to be of sufficient interest to warrant circulation for committee reactions. The subcommittee has been considering potentiometric methods for the determination of neutralization number. It was advocated that the specific method under discussion would be published for information only at this time. The subcommittee proposes to recommend to Committee D-2 that the proposed method of test for neutralization number of petroleum products and lubricants which was published last year for information only, supplant present Tentative Method D 188.

The gaging group of the subcommittee on sampling and gaging held an organization meeting in which a program of work was outlined, the subdivisions of the work being measurement by innage and outage, measuring-apparatus calibration, temperature measurement, and units of measurement.

The subcommittee on crude petroleum decided to recommend that tentative revision of Method D 285 (distillation of crude petroleum) be advanced to standard; the additions cover special procedures for obtaining large volume of distillate.

Subcommittee on natural gasoline has reviewed a number of minor suggested revisions in the Reid vapor pressure method which have been offered, and plan to incorporate these for committee reactions.

The subcommittee on carbon residue reported a correlation of results obtained by the use of the Ramsbottom and Conradson methods. The subcommittee plans to recommend that the data be published as part of the annual report of Committee D-2.

The section on gum of Technical Committee A on gasoline is drafting a so-called "liberal" method for the determination of gum stability of gasoline. It is hoped that it will be possible to specify the basic characteristics of the bomb and the accessories in such a manner as to permit the apparatus manufacturers to incorporate their own conceptions of acceptable design without reducing the accuracy and precision of the test. The section is also attempting to develop a gum-stability test for aviation gasoline which will meet with general acceptance by both the producers and users of aviation gasoline.

The section on tetraethyl lead in gasoline plans to recommend minor changes in Tentative Method D 526.

Technical Committee B on lubricants announced that following the custom of several years it would sponsor another informal symposium on lubricating oils at the time of the annual meeting of the society, June 23 to 27, the Palmer House, Chicago.

The section of Technical Committee C on turbine oils reported that test procedures for determining "rusting" and "oxidation" were being formulated prior to conducting cooperative tests.

Committee D-2 voted unanimously that the guest of honor at the annual dinner of the committee in June would be John B. Terry, chief chemist of the Standard Oil Co. of California, who has been a member of the committee for more than 20 years. Dr. T. H. Rogers, Standard Oil Co. (Indiana), was appointed chairman of the dinner committee.

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QUESTIONS ON TECHNOLOGY

By W. L. NELSON, TECHNICAL EDITOR

Tests of Gases and Oils

Will you please recommend two or three books on the testing of oils and gases? It might be well if you would include the title of book treating the subject in a somewhat elementary fashion.—G. B. L.

Unfortunately there are no up-to-date manuals on the testing of gases and oils. Such books as: White, A. H.—Technical Gas and Fuel Analysis, McGraw-Hill Book Co., New York (1920); Gill, A. H.—Gas and Fuel Analysis for Engineers, John Wiley & Sons, New York (1925) are standard references but they do not include many of the recently specified tests that are being used in the petroleum industry.

Tests are now determined in most instances from the following specifications which have been approved by the American Society for Testing Materials, American Standards Association, American Petroleum Institute, American Gas Association, and many engineering societies; Petroleum Products and Lubricants, A.S.T.M., 260 Broad Street, Philadelphia, Pa.; Testing Natural Gas to Determine the . . . Content Thereof, Natural Gasoline Association of America, Tulsa.

New or recently revised books on testing are badly needed, but the fact that most tests are being constantly revised causes publishers to look with doubt upon such books.

Fluid Velocity in Exchangers

I am planning on computing friction losses by the method of Short and Stack which is given on Page 391 of your book, "Petroleum Refinery Engineering." Do you still feel that this is a satisfactory method of computing average velocities in exchangers?—B. K.

The suitability of the method given by Short and Stack in The Oil and Gas Journal of May 10, 1934, Page 115, can be best judged from the original article. Furthermore, they checked experimental results by using their average velocity along with other details of their method and hence as an entire procedure, their method is satisfactory.

Mathematical formulations of velocity have been recently made which appear to be fundamentally sound but which cannot be exact because of the many variable conditions that are encountered.

For an exchanger having a single pass on the outside of the tubes, but having either a very large number or a very small number of half-moon or similar baffles to cause the liquid to pass back and forth across the tube bundle (see diagram):

$$\text{Approx. distance traveled} = L + \frac{n}{0.707}h \quad (1)$$

In which:

L = length of exchanger, feet
n = number of crossbaffles
h = height of baffle, feet

The 0.707 factor is introduced because the liquid takes a zig-zag path at angle of about 45° as it flows across the tube bundle. Leakage between the baffle and the tubes is neglected entirely in the above statement. For an intermediate number of baffles the L factor would be divided by various factors between 1 and 0, depending upon the spacing of the baffles. Baffle spacing is not, however, the only factor that governs the length of travel or of the constant by which L should be divided, because velocity plays an important part in the direction of flow that is established.

The time that the fluid remains in the exchanger is equal to the volume on the outside of the tubes divided by the volume of the feed and is a constant regardless of path of flow or arrangement of baffles.

$$\text{Time in exchanger} = T = \frac{0.785\,L(D^2 - Nd^2)}{F} \quad (2)$$

In which:

D = diameter (inside) of shell, feet
d = diameter (outside) of tubes, feet
N = number of tubes
F = volume of feed, cubic feet per second
T = time in exchanger, seconds

The velocity, V, is equal to the length of travel divided by the time:

$$V = \frac{(L + 1.41\,nh)F}{0.785\,L(D^2 - Nd^2)} \quad (3)$$

This general statement contains only two major variables; namely, the number of baffles, n, or the height, h, of the baffles. Thus, these variables may be assumed and the velocity computed, or the velocity can be selected and one or the other of the two variables computed. Perhaps the following form, which involves distance between baffles, is the most useful form:

$$n = \frac{12\,L}{x}$$

in which x = spacing between baffles, in inches.

and

$$x = \frac{16.9\,hF}{0.785\,V(D^2 - Nd^2) - F} \quad (4)$$

These formulations neglect leakage through the baffles, and they do not account for certain areas in the path of flow which remain somewhat stagnant. However, these inadequacies tend to nullify themselves because if the rate of flow is higher than the average in certain paths of flow, the friction loss or transfer rate is also enhanced in the high-flow regions and will thus cause more flow in other regions or make up for the low friction or heat transfer in the low-flow regions.

For multipass flow on the outside of the tubes, final Equation 3 need only be multiplied by the number of passes. However, two of the symbols must be more completely defined, as:

n = number of crossbaffles per pass
h = average height of baffles in each pass

Exchangers having other types of crossbaffles can be handled in a similar manner by using other statements for the length of travel. Thus, the length of travel for a port and annular-space baffle arrangement is the same as above except that h is defined as half of the average length of the two crossbaffles, each measured along the diameter of the exchanger shell. For an orifice-type baffle, the length of travel is approximately:

$$L + \frac{n}{2}t$$

in which t is the average distance between tubes.

Other discussions of methods of estimating the velocity are given in "Heat Transmission," by McAdams; by Short and Stack in "Effect of Diameter, Spacing, etc., on Pressure Drop Around Tubes of Shell-Type Heat Exchanger," The Oil and Gas Journal, May 10, 1934, Page 115; and by S. A. Perrone in "Pressure Drop and Heat Transfer in Exchangers," The Oil and Gas Journal, March 28, 1935.

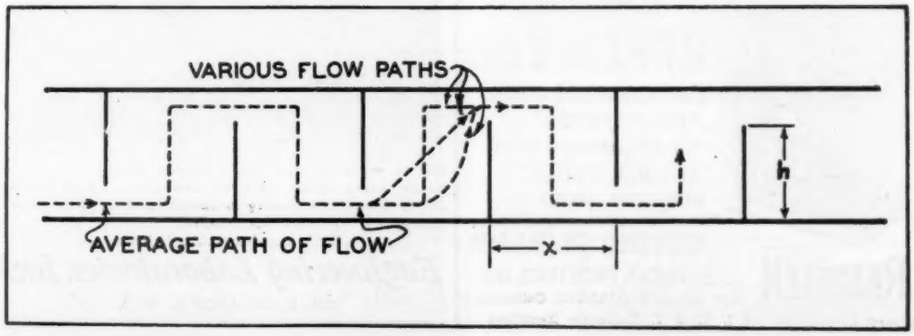
Obtaining Pure Hydrocarbons

Where can we obtain pure hydrocarbons for experimental work?—C. R. F.

The usual place to obtain pure hydrocarbons in the past has been the research departments of the large petroleum refiners and from such laboratories as those of the Eastman Kodak Co. and E. I. du Pont. Recently, however, hydrocarbons are being offered as a commercial venture. Among the hydrocarbons that are available are:

	Purity, per cent
Methane (pure)	99.3
Propane (tech.)	95.0
Propane (pure)	99.9
Propylene (tech.)	96.7
Isobutane (tech.)	90.0
Isobutane (pure)	99.5
Butane (tech.)	90.0
Butane (pure)	99.5
Isopentane (tech.)	90.0
Isopentane (pure)	99.5
Pentane (tech.)	90.0
Pentane (pure)	99.5
Pentene-2	80.0
Neohexane (pure)	99.1
Hexanes (mixed)	90.0
Heptanes (mixed)	90.0
Octanes (mixed)	90.0
Diamylene	...

The cost varies widely but is 10 to 20 cents per pound for the saturated hydrocarbon materials of technical grade and $1 to $2 per pound for pure saturated hydrocarbons. It is not the policy of The Oil and Gas Journal to disclose on this page the names of manufacturers.



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Pipe-Line Activity

Cole Committee Will Consider Georgia Pipe-Line Situation

Hearings will be conducted in Washington by the Cole subcommittee of the House interstate and foreign-commerce committee during the last week in March. At that time national-defense officials and representatives of pipe lines and railroads will be invited to appear.

One of the major items to come before the committee is the situation in Georgia where construction of two pipe lines is delayed by refusal of the railroads to grant pipe-line right-of-way. Failure of the Georgia Legislature to pass a bill forcing the railroads to grant such right-of-way or to give the pipe lines right of condemnation has brought the matter to a head.

An account of the situation existing in Georgia in regard to gasoline pipe-line rights-of-way appears elsewhere in this issue.

Tennessee Gas Line Hearings Will Be Resumed by F.P.C.

WASHINGTON, D. C.—The Federal Power Commission has entered an order directing that the public hearing, adjourned last September 27, on the application of the Tennessee Gas & Transmission Co. for a certificate of public convenience and necessity for construction and operation of a natural-gas pipe line from North Louisiana to serve areas in Tennessee and North Carolina be resumed on April 8.

Curtis B. Dall, president of the company, which proposes to construct and operate the pipe line which will cost about $20,000,000, has notified the commission, in accordance with the agreement made when the hearing was adjourned, that the company now is prepared to prosecute its application by the offering of further testimony and additional exhibits.

J. G. Dyer Is Head of Rincon Pipe Line Co.

A charter has been granted the Rincon Pipe Line Co. of Houston. J. G. Dyer, vice president of Continental Oil Co., is president of the new pipe-line company.

This pipe line will operate in the Rincon pool, Starr County. The Continental company recently purchased one-half interest in the Rincon pool from W. R. Davis, Inc.

U. S. Supreme Court Allows Panhandle Eastern to Intervene

WASHINGTON, D. C.—The Supreme Court has ruled the Panhandle Eastern Pipe Line Co. could intervene in antitrust proceedings brought by the Justice Department against the Columbia Gas & Electric Corp. and the Columbia Oil & Gasoline Corp.

Justice Frankfurter delivered the decision which reversed a decision by the federal District Court for Delaware. Justice Roberts dissented and Justices Douglas and Murphy did not participate.

Panhandle Eastern sought to intervene to support its contention that it should be permitted to operate a natural-gas pipe line from Texas to Detroit without interference from the Columbia system.

Panhandle attorneys said 50.08 per cent of its stock was owned by Columbia Oil, organized by Columbia Gas.

Antitrust charges filed by the Justice Department in 1935 alleged that Columbia Gas, acting through Columbia Oil, controlled Panhandle Eastern for the purpose of preventing competition between Panhandle Eastern and Columbia Gas.

A consent decree was entered by the Delaware District Court in 1936, but a new plan proposed by the defendants was tentatively approved last January 18 with Justice Department concurrence.

Panhandle Eastern and the city of Detroit contended the new plan was objectionable because it still permitted Columbia Oil to control the former company.

In denying intervention, the District Court said such action had not been authorized by the company because a majority of the stock, owned by Columbia Oil, had been voted against the proposal.

A similar petition filed by Missouri-Kansas Pipe Line Co., leading minority stockholder of Panhandle, also was dismissed by the District Court.

Ajax Pipe Line Co. Will Award Contract to Dempsey-Wilson

A contract for taking up 10 miles of double 10-in. pipe line and the laying of 11½ miles of double 10-in. in the vicinity of St. Charles, Mo., will be let to Dempsey-Wilson Construction Co. Granting of contract, however, depends on the federal Government arriving at an early settlement of claims which are now outstanding in connection with the procuring of options on land. The work on the Ajax trunk line is made necessary by the location of a TNT plant. New pipe will be used for the line to be laid. The pipe taken up will be salvaged for use elsewhere.

Bell's Nebraska Line Is Sold to Independent

Independent Pipe Line Co. of Falls City has purchased the gathering line and system of Bell Oil & Gas Co. in Richardson County, Nebraska, it was announced Saturday. Original sale of the Bell system was to the Sonken-Galamba Corp., which turned the properties to the Independent.

Construction of a line from the Falls City field to Rulo on the Missouri River, with construction of a

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THE OIL AND GAS JOURNAL

Pipe-Line Personalities . . . . . H. C. Price

HAROLD C. PRICE, president of H. C. Price Co., Bartlesville, Okla., was born in Washington, D. C. After graduating from Colorado School of Mines in 1913, where he specialized in metallurgy, he obtained his first job as chemist and engineer with a mining company at Montezuma, Colo. The next year he was a chemist with American Metal Co. at Salida, Colo.; in 1915 he was put in charge of the company's zinc oxide plant at Bartlesville, Okla. From 1917 to 1919 he served in the U. S. Coast Artillery Corps at Fort McArthur, Calif., and with the First Army artillery in France. After the war, he was with American Metal Co. in Pennsylvania and Bartlesville. In 1921 he started in the electric-welding business with a shop in Bartlesville, operated until 1922. Then he began contracting the welding of oil-field storage tanks, with a job at El Dorado, Kans. His first large contract was for Mariand Oil Co., Texas City, Tex. He continued in tank welding until 1928 when he took up pipe-line welding with a contract for 200 miles of 8-in. for Texas Pipe Line Co. between Corsicana and St. Augustine, Tex., which was the first pipe-line project of any size constructed for the industry by electric welding. The following year he handled the welding of about 500 miles of the Texas Empire Pipe Line Co.'s 12-in. line from Cushing, Okla., to Chicago. The Price organization has had an active part in electric welding in the period of pipe-line expansion which has followed, having operated in 26 states and in Venezuela. He is married and has a son 14, in junior high school, and a son 11, in grade school at Bartlesville.

barge terminal, has been studied by the Independent company.

Pipe-Line Ownership Is Studied by T.N.E.C.

Included in the progress report of Dewey Anderson, executive secretary of T.N.E.C., is a statement regarding the ownership of pipe-line facilities used by the petroleum industry. According to this, 16 companies control 96 per cent of the gasoline pipe-line mileage; 14 companies control 89 per cent of the total crude-oil mileage.

Toronto Pipe Line Completes Facilities in Wabash Valley

Toronto Pipe Line Co. completed connections early this week for all lines laid in the recent construction of a pipe-line system in the Wabash Valley area which extends across the southern Illinois-Indiana state line. The first oil was run into the line on February 22; deliveries began last week. The company has established an office at Rayville, Ill.

Pipe-Line Welding Shop Uses Improved Practices

The welding shop of a pipe-line system reflects the progress which is being made by the operating organization of the company in improving methods for construction, operation and maintenance of facilities, according to Blue Blaze News, published by Lone Star Gas Co. At the Dallas welding shop of this company special attention is given to new gadgets, devices and practices which will contribute to the efficiency of the system.

Take the problem of keeping the blades on ditching machines in first-class condition. The shop turns out carbon-steel rooters in quantities as they are needed. Bought in rough forgings, the blades are welded in the shop with hard-surface alloy. When blades are worn, they are returned to the shop for resurfacing.

Wrinkles which have their origin in the minds of the field men and engineers who work constantly to improve their tools of operation, find expression in the shop where they are fabricated by welders from rough designs and sometimes from only verbal description.

Such a piece of equipment is the pressure tank now being used by Lone Star inspection-maintenance crews in measuring station cleanup. An idea that water pressure for washing down the station interiors could be provided although stations were miles from water lines, evolved into the conversion of small Stargas drums for carrying water supply at 50 lb. pressure. The tanks are being converted in the shop and are furnished to all inspection crews.

The gate-valve wheels which are brought into the shop broken and ready for the discard are returned to service after being repaired to serviceable condition. Three-fourths-inch pipe is cut and welded in as new spokes for the wheel.

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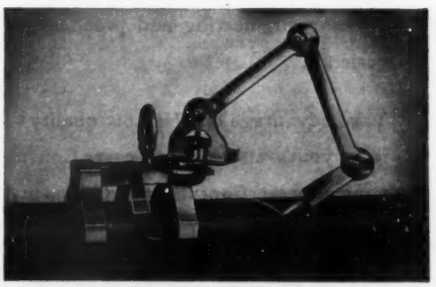

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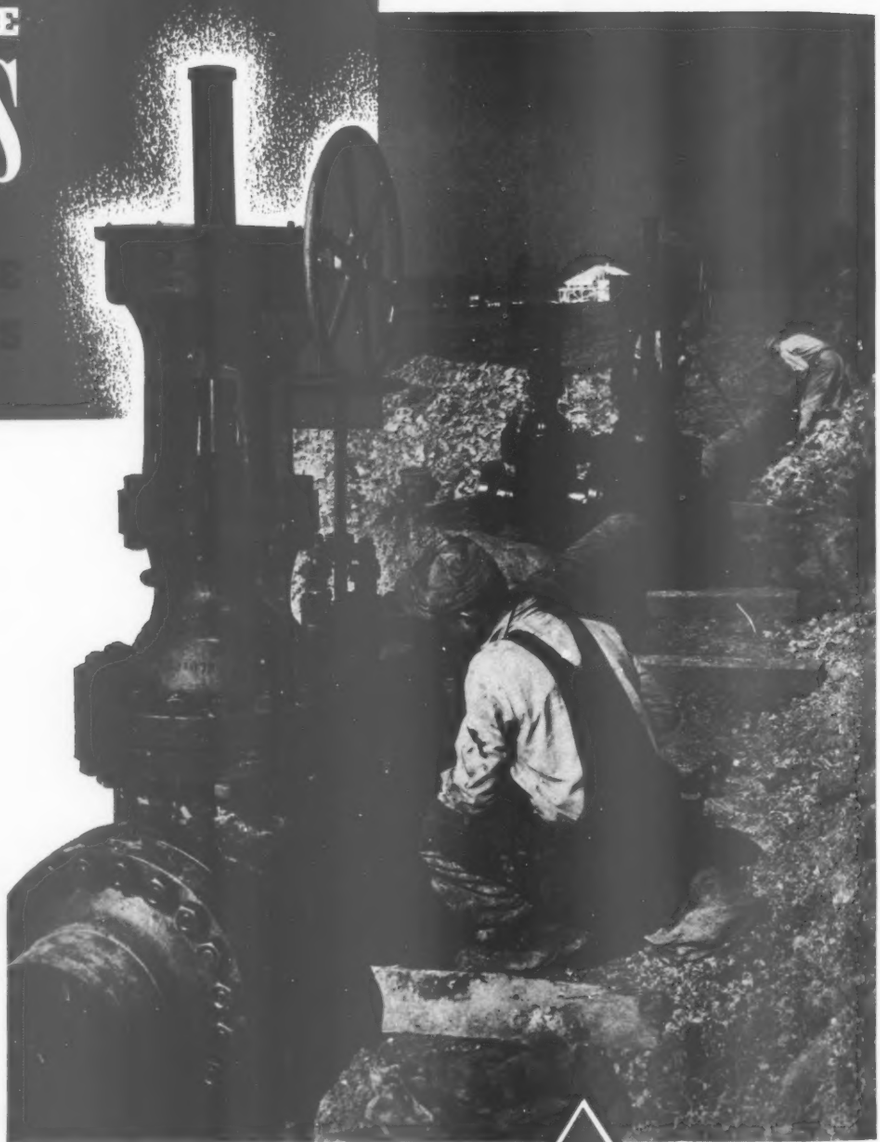

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FIELD DEVELOPMENTS...

HIGHLIGHTS FROM THE WEEK'S NEWS—

Included in the 470 wells completed throughout the nation this week—a gain of 14 over the previous week—were a number of important discoveries in almost every producing area. Outstanding was the pool opener in northern Archer County, North Texas, which helped establish the existence of a deep trend of production across the entire northern part of the county. It is believed that the find would be reflected largely in increased drilling at the Hull-Silk pool nearby.

California's Inglewood field also appeared to be due for considerable development following the completion of a good well in the northwestern end of the field outside of present production.

A growing phase of the industry in Oklahoma, secondary-recovery operations, gained attention as water-flood operators, protesting the proposed construction of a flood-control dam, showed they had doubled production from the northeastern part of the state in the past 5 years.

Illinois operators, seeking to bolster their production, began developing some of the newly discovered small pools such as Mount Carmel for lack of prospects of a major strike. The same was true in East Texas where interest in the Hawkins pool declined. On the Louisiana Gulf Coast, oil flowed from a new well in the Perkins gas-distillate field, and apparently opened a new oil pool.

CALIFORNIA: Completion of an 1,850-bbl. well outside of present production in the northwest end of the Inglewood field started plans for new drilling in the area. At least 10 wells are expected to start in the next 30 days. Sand conditions at the new well indicated that the Sentous zone in the central and northern part of the field would prove highly productive (p. 62).

TEXAS GULF COAST: Important production was opened from a new sand in the basal Frio formation in the Ganado field, and drilling activity is expected to step up as a result. Wildcat drilling increased and production tests were made at discovery wells in the West Ganado field, the new Vienna field and the Lake Creek area (p. 78).

ARKANSAS: Oil was discovered in the McKamie field and new production was found deep in the El Dorado field, bringing a revival of interest in the state (p. 65).

WYOMING: The Tensleep horizon in the Mahoney Dome field was extended ¼ mile (p. 79).

LOUISIANA GULF COAST: The Perkins gas-condensate field apparently became an oil field after a new well flowed 22.8-gravity oil. A Wilcox test in the Glenmora area was abandoned and attention shifted to a deep test in the Eola field (p. 89).

KANSAS: Extension of fields along the Barton arch, or Central Kansas uplift, continued with pool limits pushed out by new wells at Kraft, Neidenthal and Silica. A new pool was showing in Stafford County northwest of the Hiss pool (p. 76).

COLORADO: Sundance production at Wilson Creek was assured when the discovery well flowed 800 bbl. in 24 hours on a preliminary test (p. 79).

NORTH TEXAS: Existence of a deep trend of production across the entire northern part of Archer County was indicated by production tests at a discovery well between the rapidly expanding Hull-Silk field and the Mankins deep field. Also believed to be on the trend is the Vogtsberger field farther northeast. The new well pumped about 100 bbl. a day from the Mississippian lime at 4,920 ft., and is expected to boost drilling at Hull-Silk (p. 68).

OKLAHOMA: While preliminary testing at the new Guthrie pool in Logan County supported belief that it was of major importance, secondary recovery projects in the northeastern part of the state swung into the limelight at a hearing at Claremore. Operators protesting proposed construction of the Oologah Dam showed that water-flood projects have doubled production from the area in the last 5 years, and the practice is being extended. Best guess as to subsurface conditions at Guthrie put the discovery well northwest of the structural high, and discounted the possibility that it would connect with the nearby Langston pool (p. 66).

NORTH LOUISIANA: Smackover lime production, opened a week ago at Lisbon, is indicating important gas-condensate reserves. Meantime, four wildcats in La Salle Parish are showing prospects of becoming field openers in the Wilcox formation, and the shallow Bellevue pool of Bossier Parish is extended (p. 65).

SOUTHWEST TEXAS: Major extensions were made to the Kelsey and Rincon fields in Starr and Jim Hogg counties and a new Pettus sand discovery was opened in Bee County, the first in several months. Two wildcats also made favorable showings, a Frio sand test in Refugio County and a marine operation in Aransas Bay which flowed gas and distillate (p. 70).

WEST TEXAS: The final outcome of three tests in the new Abell field of Pecos County was recorded. Two of the tests were completed as north extensions to the field while the third was drilling deeper after defining the field on the west side. The North Cowden field in Ector County had showings of a 1½-mile north extension into Andrews County (p. 84).

WEST CENTRAL TEXAS: The prospective Cook sand discovery well between the Akard and the Stith fields in southern Jones County is still testing, as is the probable deeper pay opener in the Stith field itself. The upper Hope field discovery indicator, southwest of Hawley, has been definitely declared noncommercial in the Hope sand level and is being deepened (p. 68).

ILLINOIS: Declining production and a dearth of prospects for new large pools spurred operators to develop the small pools which have been opened during the past year. One of the most important of these was at Mount Carmel (p. 81).

EAST TEXAS: Several little-developed fields, including one gas area and one gas and distillate area, were in line for renewed activities following preliminary work of the past few weeks. In the Hawkins field, Humble Oil & Refining Co. is preparing to complete its first two wells in the area as gas producers, the first such for the field (p. 83).

COMPLETIONS IN ALL FIELDS . . .

(Week Ended March 8, 1941)

	Oil	Gas	Dry	Total	1941 total comp. to date	1940 total comp. to date
N. Y., Pa., and W. Va.	52	16	5	73	781	671
Ohio	5	20	5	30	249	148
Indiana	4	1	3	8	69	54
Kentucky	4	2	4	10	100	70
Illinois	35	0	18	53	514	600
Michigan	2	1	13	16	161	226
Kansas	26	3	2	31	290	245
Oklahoma	14	3	3	20	253	297
Nebraska	1	0	1	2	16	0
Texas:						
North Central Texas	26	2	21	49	459	536
West Texas	31	1	1	33	329	369
Texas Panhandle	9	1	0	10	89	114
Eastern Texas	15	0	5	20	208	154
Texas Gulf Coast	13	1	3	17	179	230
Southwest Texas	20	4	12	36	271	391
Total Texas	114	9	42	165	1,535	1,794
North Louisiana	4	2	4	10	110	104
Louisiana Gulf Coast	11	0	3	14	146	131
Total Louisiana	15	2	7	24	256	235
Arkansas	4	0	1	5	31	39
Mississippi	3	0	0	3	30	16
Montana	4	0	0	4	49	24
Wyoming	2	0	0	2	26	25
Colorado	0	0	0	0	5	5
New Mexico	6	0	2	8	58	124
California	16	0	0	16	201	186
Total United States	307	57	106	470	4,627	4,759
Total previous week	295	53	108	456		
Week ended Mar. 9, 1940	367	39	115	521		

By
L. P. STOCKMAN

Extension of Inglewood Field May Start Drilling Campaign

LOS ANGELES, Calif., Mar. 10—Federal Oil Co. projected the Inglewood field of Los Angeles Basin into the limelight this week by completing 1 Smith flowing 1,850 bbl. of clean 31.4-gravity oil and 2,050,000 cu. ft. of gas daily from 8,337 ft. This new well is located outside present production in the northwestern end of the field. Tide Water Associated Oil Co., Hogan Petroleum Co. and Texas Co. have offsetting acreage and will undoubtedly begin early work. The large production shown by 1 Smith proved somewhat of a surprise although it was necessary for the company to use 90-lb. mud to keep the well under control for several weeks prior to completion. Production has been reduced to 500 bbl. per day due to limited storage facilities and to the fact that the oil produced is being moved off the lease by tank truck. When this outpost first came in it flowed for some time at the rate of 100 bbl. per hour and the high cut that was in evidence upon completion subsequently cleaned up.

SUMMARY OF COMPLETIONS

	No.	Bbl.	Footage
San Joaquin Valley	8	13,069	71,042
Coastal district	2	2,766	13,217
Los Angeles Basin	6	3,351	38,000
Total	16	19,186	122,259
Recompletions	1	1,446	

Indications are that at least 10 wells will be started in various parts of the field within the next 30 days. The sand being produced by 1 Smith is believed to be the Sentous zone that was discovered late last year by R. R. Bush Oil Co. on the Sentous lease in the extreme southeastern end of the Inglewood structure. Unlike the zone found in Sentous, however, the zone being produced in 1 Smith has good porosity and permeability and plenty of gas. A rough estimate indicates that the Smith zone contains approximately 40 per cent oil sand. This together with the large penetration, 417 ft., indicates that the Sentous zone in the central and northern part of the field will prove highly prolific. No. 1 Smith, which was started last year by Federal Oil Co. and then suspended at 7,500 ft. for several months, was taken over by R. R. Bush Oil Co. a few months ago and carried down to the Sentous zone. In consideration of this, the Federal Oil Co. retains the 80-acre Smith lease and gave an additional 80 acres to Bush Oil Co. for its expenditure. The latter will also recover its cash outlay from the production.

Wells scheduled for completion in the Sentous zone in the Inglewood field should be drilled in about 60 days or less after some additional correlation points are available. It is possible that some of the wells finished in the upper zones may be redrilled and deepened to the new zone. There are a number of wells producing from a depth of around 4,500 ft. that would prove suitable for deepening but some of these are offsets and it is quite likely that operators will refrain from drilling in locations that would necessitate aggressive offset drilling.

In addition to Federal Oil Co., Standard Oil Co., R. R. Bush Oil Co., Tide Water Associated Oil Co., Hogan Petroleum Co., Texas Co., Shell Oil Co. and Kettleman & Inglewood Corp. there is a possibility that one or two additional operators may participate in deep-zone exploitation.

Completion of 1 Smith in the northwestern end of the Inglewood structure leaves the outer limits of deep-zone production wide open. The 1 Smith found top of the Sentous zone 309 ft. higher than it was encountered in the southwestern end of the field in 1 Sentous and it may be assumed the productive limits of the deep zone will overlap the upper zones and extend farther to the northwest and thus open up additional leases for development. R. R. Bush Oil Co. has already staked location for 1 Merchants and will proceed with immediate drilling. This well is located a little farther out than 1 Smith but appears to be located within possible productive limits.

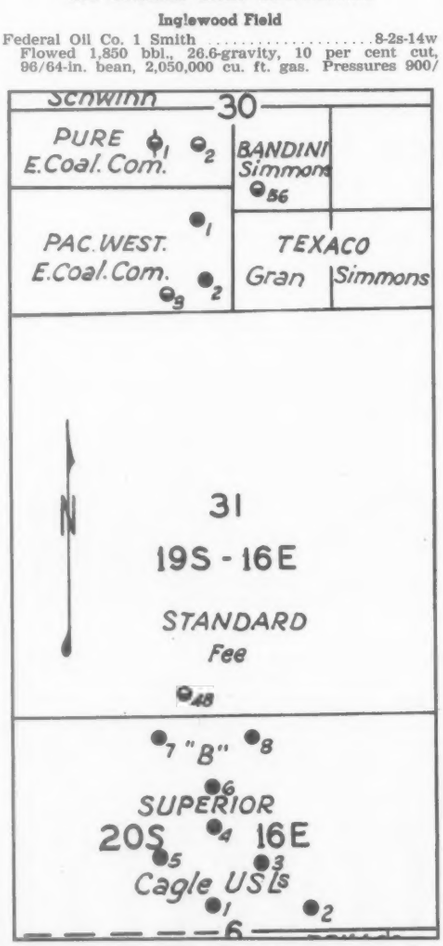
Long Beach.—Several new wells are being started in the Long Beach field in Los Angeles Basin but as far as is known all are scheduled for completion in the upper zones. Union 19 Long Beach Community, a recent completion in the deep Dormax zone, has proved to be a distinct disappointment as production has so far failed to clean up and show the expected increase. It is the smallest producing well completed in the 10,000-ft. zone to date. Wells around this location had been prepared for deepening operations as offset requirements but the small production shown by Union's well will probably have a tendency to retard further deep drilling for the present.

In the Rosecrans field, the ninth zone was found wet at 9,347 ft. and accordingly 8 Trust is being plugged back to the O'Dea zone. This well found what at first appeared to be a promising oil sand in the ninth zone but on a test the entire zone was wet. This plug-back job will stop other moves that were expected to be made. At 9,618 ft. 45 Rosecrans of Union in the same field tested wet and has been recemented. Perforations at 8,942 ft. tested wet and a squeeze job has been effected.

LOS ANGELES BASIN COMPLETIONS

Inglewood Field

Federal Oil Co. 1 Smith 8-2s-14w
Flowed 1,850 bbl., 26.6-gravity, 10 per cent cut, 96/64-in. bean, 2,050,000 cu. ft. gas. Pressures 900/1,050 lb. Elev. 198 ft. T.D. 8,337 ft. 7-in. water string 7,920 ft., 539 ft. 4¾-in. liner 8,335 ft., perf. 7,920-8,337 ft., 8,305 ft. 2½-in. including 260 ft. 2-in. tubing., probably Sentous zone. Well beaned back to 500 bbl. clean 31.4-gravity oil and 1,050,000 cu. ft. gas. 9/64-in. bean pressures 1,800/3,000 lb. Los Angeles County.



Standard Oil Co. has started development of 640 acres of fee land in 31-19s-16e, shown here between the Northeast and Southeast Coalinga fields in Fresno County

Long Beach Field

Royalty Service Corp. 1-I.C. 19-4s-12w
Flowed 175 bbl., 28.1-gravity, 4 per cent cut, 32/64-in. bean. Elev. 82 ft. T.D. 6,685 ft., P.B. 6,550 ft. 7-in. water string 6,336 ft. 238 ft. 5½-in. liner 6,550 ft. Perf. 6,345-6,550 ft. 6,512 ft. 2½-in. tubing. 42 days' drilling time. Los Angeles County.

Union 19 Long Beach Comm. 30-4s-12w
Pumped 103 bbl., 29.6-gravity, 50 per cent cut, 25,000 cu. ft. gas. Elev. 193 ft. T.D. 10,894 ft., P.B. 10,582 ft. 7-in. water string 9,657 ft. 969 ft. 5½-in. liner 10,579 ft. Perf. 9,694-10,579 ft. Completed in Dormax zone. 164 days' drilling time. Los Angeles County.

Seal Beach Field

Continental 16 Bixby 11-5s-12w
Gas lift 566 bbl., 25.7-gravity, 9 per cent cut, 185,000 cu. ft. net formation gas. Elev. 9 ft. T.D. 4,720 ft. Redrilled 4,593 ft. 6⅝-in. water string 4,535 ft. 108 ft. 4¾-in. liner 4,593 ft. Perf. 4,537-63 ft. Recompleted in Bixby zone. Los Angeles County.

Wilmington Field

Vulcan Oil Co. 4-W Harbor 32-4s-13w
Pumped 119 bbl., 15.2-gravity, 5 per cent cut. Elev. 33 ft. T.D. 3,720 ft. 8⅝-in. water string 3,020 ft. 720 ft. 5½-in. liner 3,720 ft. Perf. 3,023-3,205 ft., 3,225-3,300 ft., 3,475-3,650 ft., 3,680-3,720 ft. 3,596 ft. 2½-in. tubing. Completed in Ranger zone. 17 days' drilling time. Los Angeles County.

Long Beach Oil Dev. Co. 20-W Harbor 3-5s-13w
Flowed 538 bbl., 28.5-gravity, 0.6 per cent cut, 14/64-in. bean. Pressures 200/300 lb. Elev. 35 ft. T.D. 4,218 ft., P.B. 4,175 ft. 11¾-in. water string 2,688 ft. 8⅝-in. oil string 4,171 ft. Perf. 3,293-3,677 ft. 3,721-4,171 ft. 4,136 ft. 2½-in. tubing with packer. Perf. 3,293-3,677 ft., gravel packed. Completed in lower Terminal zone. 52 days' drilling time. Los Angeles County.

LOS ANGELES BASIN OUTPOSTS OR DEEP TESTS

Dominguez Field

Union 79 Callender 32-3s-13w
T.D. 12,720 ft. in basement Schist. P.B. 10,314 ft. Swabbing, no kick. Los Angeles County.

Inglewood Field

Standard 3-1 L.A.I. 17-2s-14w
Drilling and coring 9,360 ft. Miocene sandy shale with streaks of tight gray sand. Los Angeles County.

R. R. Bush Oil Co. 1 Merchants 8-2s-14w
Derrick built. Los Angeles County.

Rosecrans Field

Southern Cal. Pet. Corp. 1 Townsite 12-3s-14w
Drilling in hard tight gray sand 6,798 ft. Went through fault zone. Circulation lost 4,900 ft., 5,050 ft. and 5,125 ft. Los Angeles County.

LOS ANGELES BASIN WILDCATS

Dominguez-Gardena District

Wood-Mellon 1 Wood 31-3s-13w
Taken over by Vesta Petroleum Co. for further work. T.D. 7,795 ft. P.B. 2,400 ft. Redrilled to 6,975 ft. Bailing. Los Angeles County.

Hiles Drilling Co. 1 Grant 29-3s-13w
Pongratz Pet. Co. drilled to T.D. 7,666 ft. and abandoned in 1940. Cleaned out to 7,190 ft. Now drilling 7,220 ft. Los Angeles County.

SAN JOAQUIN VALLEY

Rio Bravo.—Superior Oil Co. recorded some fast drilling in the Rio Bravo field this week by completing 3 Curtis in 28-28s-25e flowing 1,514 bbl. of clean pipe-line oil and 1,890,000 cu. ft. of gas daily from 11,470 ft., 33 days after spud. This well does not set a new record for the field but it does represent fast work. The Rio Bravo field is fairly well drilled up and from now on we may anticipate a restriction in drilling. The limits of production at Rio Bravo have been established to the southeast, to the northwest and along the north flank of the structure by dry holes. No dry hole yet marks the western limits of production but contours based on the top of the Rio Bravo zone indicate that the outer limits are very far removed. Superior Oil Co., the most aggressive operator in the Rio Bravo field and largest producing company, is drilling 4 Burner, 1-2 Osborne and 4 Smith and has derricks going up for 2 Curtis, 1-3 Osborne and 3 Pasadena Realty. Union's operations are restricted to the drilling of one well, 52-28 Crites in 28-28s-25e.

Deep wells.—There was no appreciable change in

any of the deep exploratory wells being drilled in the San Joaquin Valley during the current week although with each day's work they look more favorable. There is no special area now undergoing exploratory work that appears to show unusual promise and for this reason new discoveries in the San Joaquin Valley are expected to be limited during 1941. However, the McClung district, located southeast of the Greeley field in Kern County, showed up very good on a seismograph survey conducted by Union Oil Co. and the wildcat being started by Union may bear watching at a later date. Superior Oil Co. first tried out the McClung district following a seismograph survey but subsequently pulled out after drilling three dry holes east of Union's present location. This area on the basis of geophysical work appears to have considerable merit.

Tide Water Associated Oil Co. has apparently drilled through the Vedder zone in 25-7-E Kern County Land in the Strand field of Kern County and since it was barren the deep test is expected to be an early abandonment. This well is now down 12,700 ft. Tide Water Associated Oil Co. discovered the Strand field by completing a commercial well in the Stevens oil sand. The Stevens has not proved very productive, however, and now with the Vedder barren the field becomes one of secondary importance. The acreage developed in the Strand field by Tide Water Associated Oil Co. was originally held by Continental Oil Co.

The latter company had two plays and accordingly decided to drill one and allow Associated to drill the other. Continental's wildcat proved to be a dud whereas Tide Water Associated found a new field in the Strand area. The former retained an interest in the acreage turned over to Tide Water. Continental is at present drilling a wildcat in the Shafter district of Kern County. Honolulu's deep zone test on the Buena Vista anticline in the Buena Vista Hills section of the Midway-Sunset field has taken on a doubtful aspect as the bit is now down below 12,500 ft. This is one of the most important deep zone tests under way in the state because if it results in commercial production it will prove up a reserve that will be the largest in the state. The well is located on fee-owned acreage and on the same 640 acres on which Honolulu drilled the discovery well in the Buena Vista Hills anticline.

Coalinga.—Operators in the Northeast and Southeast Coalinga fields are nearing the end of their development programs although there will be no abrupt decline in drilling. When the present stage is reached it usually results in a gradual slowing up of drilling. It is of interest to note, however, that if Standard Oil Co. finds Section 31 productive it will increase present estimates. This 640 acres of fee-owned land is located between the Northeast and Southeast Coalinga fields and thus its development will indicate whether these two fields meet. Both are tapering toward the west and it is possible, therefore, that Standard may have either only a very few wells or a large number of locations available in the intervening area. The latter case would exist if the two fields met with not too much of a pronounced angle. It is the general belief that the two fields will present a situation resembling an hour glass. In this event Standard's Section 31 would be located where the two outer convex surfaces meet.

It remains to be seen, however, whether these two productive areas meet as the productive characteristics of each differ very materially. The Northeast Coalinga field contains a gas-cap area whereas the Southeast Coalinga field contains a great thickness of porous permeable oil sand that is characterized by large production of crude oil and a low gas-oil ratio. This would appear to indicate that the two fields are separate entities.

SAN JOAQUIN VALLEY COMPLETIONS

Canal Field

Ohio 6-E Kern County Land 14-30s-25e
Flowed 1,446 bbl., 34.6-gravity, 0.6 per cent cut, 1,141,000 cu. ft. gas, 64/64-in. bean. Pressures with 16/64-in. bean 475/1,600 lb. Elev. 330 ft. T.D. 8,333 ft., 6⅝-in. water string 8,063 ft. 243 ft. 4¾-in. liner 8,258 ft. 80 ft. 3½-in. liner 8,330 ft., perf. 8,082-8,330 ft., 8,315 ft. 2½-in., 2-in. and 1¼-in. tubing. Deepened from 8,260 ft. Producing from upper and lower Stevens oil sand. Kern County.

Coalinga Northeast Field

Amerada 24-17 S.P.L. 17-19s-16e
Flowed 3,204 bbl., 28.3-gravity, 0.2 per cent cut, 1,635,000 cu. ft. gas. 27/64-in. bean. Pressure 1,050/1,250 lb. Elev. 540 ft. T.D. 8,205 ft. 5½-in. combination string 8,205 ft. Perf. 8,187-92 ft., 8,148 ft. 2½-in. tubing. 45 days' drilling time. Fresno County.

Coalinga Southeast Field

R. S. Lytle 55-18-F 18-20s-16e
Flowed 2,282 bbl., 31.4-gravity, 0.2 per cent cut, 1,374,000 cu. ft. gas. 34/64-in. bean. Pressures 1,075/1,250 lb. Elev. 879 ft. T.D. 7,956 ft. 8⅝-in. water string 7,355 ft. 631 ft. 6⅝-in. liner 7,951 ft., perf. 7,402-7,951 ft., 7,892 ft. 2½-in. tubing. Bottomed in silt. 52 days' drilling time. Fresno County.

Coles Levee Field

Ohio 13-F Kern County Land 3-31s-25e
Flowed 558 bbl., 33.4-gravity, 1.2 per cent cut, 911,000 cu. ft. gas. 48/64-in. bean. Pressures 350/1,300 lb. Elev. 305 ft. T.D. 9,868 ft. 7-in. water string 9,455 ft. 440 ft. 4¾-in. liner 9,867 ft., perf. 9,460-9,867 ft., 9,733 ft. 2½-in. tubing including 240 ft. of 2-in. 86 days' drilling time. Kern County.

Greeley Field

General Petroleum 3 Oughton 12-29s-25e
Flowed 1,485 bbl., 39.1-gravity, 0.1 per cent cut, 400,000 cu. ft. gas. 18/64-in. bean. Pressures 1,350/1,400 lb. Elev. 337 ft. T.D. 11,500 ft. 5½-in. water string 11,268 ft. 275 ft. 3½-in. liner 11,500 ft., perf. 11,255-11,500 ft., 11,459 ft. 2-in. tubing. Producing from Rio Bravo and Vedder zones. 125 days' drilling time. Kern County.

General Petroleum 3 Sullivan 12-29s-25e
Flowed 1,020 bbl., 39.1-gravity, 0.1 per cent cut, 400,000 cu. ft. gas. 18/64-in. bean. Pressures 1,450/1,450 lb. Elev. 337 ft. T.D. 11,510 ft. 5½-in. water string 11,397 ft. 160 ft. 4-in. liner 11,509 ft. Perf. 11,414-11,509 ft. 11,470 ft. 2-in. tubing. Producing from Rio Bravo and Vedder zones. Rio Bravo zone 11,415 ft. Vedder zone 11,463-11,510 ft. 101 days' drilling time. Kern County.

McKittrick Front Field

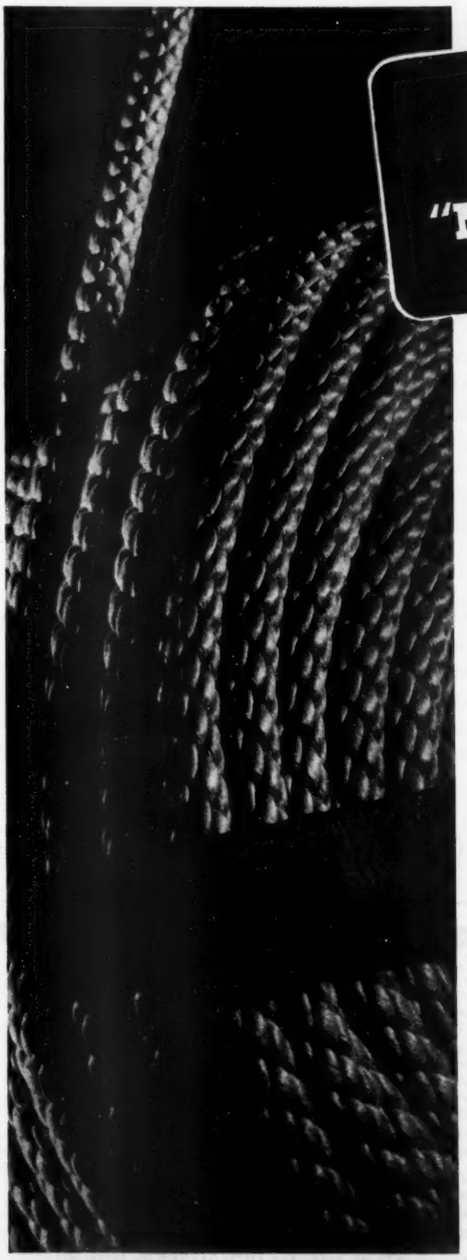
Hoyt, Otis, 12 Union.....6-30s-22e
Pumped 710 bbl., 14.7-gravity, 4 per cent cut. Elev. 838 ft. T.D. 2,298 ft. 8⅝-in. water string 2,180 ft. 145 ft. 6⅝-in. liner 2,298 ft. 100-mesh perf. 2,178-2,298 ft. 2,198 ft. 3-in. tubing. Completed in Franco-Western oil sand. Flowed for several hours but sanded up. Also blew wild for 1 hr. at 2,100 ft. Dry gas sand known to exist around 2,000 ft. 30 days' drilling time. Kern County.

Rio Bravo Field

Superior 3 Curtis 28-28s-25e
Flowed 1,514 bbl., 33.2-gravity, 0.5 per cent cut, 1,890,000 cu. ft. gas. 36/64-in. bean. Pressures 1,250/1,300 lb. Elev. 338 ft. T.D. 11,470 ft. 7⅝-in. water string 11,372 ft. 119 ft. 5½-in. liner 11,470 ft. Perf. 11,371-11,470 ft. 11,015 ft. 2½-in. tubing. Completed in Rio Bravo zone 11,372-11,470 ft. 33 days' drilling time. Kern County.

Ten Section Field

Shell 74-29-A Kern County Land 29-30s-26e
Flowed 2,296 bbl., 34.7-gravity, 2.1 per cent cut, 2,090,000 cu. ft. gas. 128/64-in. bean. Pressures 500/500 lb. Elev. 335 ft. T.D. 8,235 ft. 4½-in. combination string 8,231 ft. Perf. 8,055-8,231 ft. 8,200 ft.



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2-in. tubing. Stevens oil sand 7,853-8,235 ft. 19 days' drilling time. Kern County.

SAN JOAQUIN VALLEY OUTPOSTS

Coalinga Southeast Field

Standard 48-31-B fee 31-19s-16e
Drilling 612 ft. in surface sand. Fresno County.

Coles Levee Field

Standard 20-8 Kern County Land 5-31s-25e
T.D. 9,660 ft. in gray sand. Swabbing. Elev. 430 ft. Kern County.
Standard 20-9 Kern County Land 9-31s-25e
Rigged up. Elev. 304 ft. Kern County.

Elk Hills Field

Standard 42-31-S 31-30s-24e
Drilling and coring in sand and shale 6,451 ft. Elev. 1,122 ft. Kern County.
Standard 44-29-S 29-30s-24e
Drilling in sand and shale 3,994 ft. Elev. 866 ft. Kern County.

Kettleman North Dome Field

Standard 1-1-U fee 1-23s-16e
Drilling in gray sand and oil sand 11,364 ft. Bottomed in Eocene. Elev. 693 ft. Kings County.

Midway-Sunset Field

No. Amer. Oil Consd. 1-28 W.P. 28-32s-23e
Drilling in very hard shale with streaks of impervious sand 5,970 ft. Located on Spellacy anticline in which Standard Oil Co. found a deep oil sand several years ago that failed to produce commercially. Elev. 1,560 ft. Kern County.

Paloma Field

Western Gulf 12-12-B Kern County Land 12-32s-26e
T.D. 10,752 ft. in Stevens oil sand. Completing. Formation test 10,435 ft. flowed 572 bbl., 52.7-gravity, clean. Bottom-hole pressure 2,750 lb. 7⅝-in. string cemented 10,230 ft. 13⅜-in. surface pipe cemented 1,229 ft. Elev. 288 ft. Kern County.

Strand Field

Associated 25-7-E Kern County Land 7-30s-26e
Drilling 12,730 ft. Formation 12,535-12,653 ft., believed barren Vedder zone. Sand at 11,510 ft. may be Olcese. Elev. 334 ft. Kern County.

SAN JOAQUIN VALLEY WILDCATS

Cantua Creek District

Texas 27-13 Southern Pacific 13-17s-15e
Drilling and coring 9,375 ft. in sand and shale. Elev. 340 ft. Fresno County.

Buena Vista Hills District

Honolulu 25-P fee 10-32s-24e
Drilling 12,565 ft. in shale with streaks of hard sand. Elev. 916 ft. Kern County.

Buttonwillow District

Texas 47-15 Southern Pacific 15-29s-24e
T.D. 7,956 ft. in sand and shale. Cemented fish in place 6,178-6,536 ft. P.B. 3,200 ft. Redrilling 6,584 ft. Elev. 287 ft. Kern County.

Maricopa District

Bankline Oil Co. 24-24 Sunset 24-11n-23e
Drilling and coring in sand and shale 1,651 ft. Elev. 970 ft. Kern County.

McClung District

Union 31-3 Kern County Land 3-30s-26e
Drilling surface sand 1,120 ft. Kern County.

Mount Poso District

Shell 77-11 Smith 11-26s-27e
Rigging up rotary. Expect Vedder zone around 3,000 ft. Kern County.

Pyramid Hills District

C. C. M. O. Co. 1 Bocqueraz 17-24s-18e
T.D. 1,246 ft. in sandy shale. P.B. 850 ft. Cemented 6⅝-in. casing 750 ft. Running liner. Point of Rocks oil sand 765-825 ft. Elev. 718 ft. Kings County.

Shafter District

Continental 2-C Kern County Land 35-27s-24e
Drilling in sandy shale 10,850 ft. Elev. 986 ft. Kern County.

Tejon District

Richfield 1 Tejon ranch 2-10n-19w
Drilling and coring in gray Eocene sand and shale 10,698 ft. Elev. 1,043 ft. Kern County.
Kern Line Oil Co. 1 Wheeler Ridge 19-11n-19w
Drilling 8,435 ft. in shale and siltstone. Elev. 970 ft. Kern County.

COASTAL DISTRICT

Aztec Oil Co. is the newest entrant into the Newhall-Castaic region which is located in western Los Angeles County adjacent to the Ventura County line and present plans call for the starting of drilling operations within the next 2 weeks. This company selected and leased some favorable acreage prior to completion of 1 Lincoln of R. E. Havenstrite the discovery well in the Del Valle field. The property to be developed by Aztec Oil Co. is located on the north flank of the Pico anticline and the well will be located in the SE¼ of the SE¼ of 6-3n-16w. Under an arrangement recently completed, Standard Oil Co. with holdings in the area, will supply the water.

Royalty Service Corp. will supply all tubular material in addition to cement and Pacific Western and Getty interests will contribute some dry-hole money. It is the present intention to drill to at least 6,000 ft. and the company at this depth expects to penetrate the upper and lower Modelo formation of Miocene age.

Drilling operations in the Coastal district have been slowed up during the past few weeks due to heavy rains that in many cases have washed out roads. This is particularly true with respect to wildcat wells. Potentially productive acreage in the Newhall-Castaic region has been leased up almost solid for several months and for this reason it is believed that the coming summer months will see aggressive exploratory work started. This region contains almost countless anticlinal structures, some rather limited in scope and if extensive exploration proves the Modelo uniformly productive we may anticipate the discovery of several new fields. To date only the upper part of the Modelo has been tested and it is believed that additional production may be expected in an additional 3,000 ft. of Modelo below present production.

The many unsuccessful attempts of operators to uncover new fields in the San Joaquin Valley will probably result in increased wildcat work in the Newhall-Potrero area where exploratory wells are substantially shallower and therefore less costly. The only possible hindrance to extensive exploratory work by major companies lies in the fact that if they do not have potentially productive acreage at present they do not stand much chance of engaging in wildcat drilling. Union Oil Co., Standard Oil Co., Shell Oil Co., Inc., and Texas have extensive holdings in this area some of which dates back a number of years.

Bolsa Chica Oil Co. wrote finis to the concerted attempts to develop commercial production in the Coal Oil Point section of Santa Barbara County recently when it failed to exercise its right to continue drilling operations. When the company indicated it could not comply with an order to begin immediate work, the state Lands Commission canceled the permit. Several wells have been drilled in the Coal Oil Point district during the past 10 years and while some slight indications were found from time to time none of the operators who tried the district succeeded in finding production.

Bolsa Chica Oil Co. drilled a straight hole in its first attempt but finally hung up tools for several months. Later other operators reentered the hole and whipstocked it further out into the water, then to the

(Continued on Page 78)

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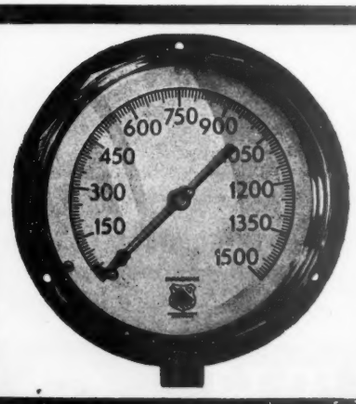
The Oil and Gas Journal, Tulsa



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ASHCROFT GAUGES — MANNING, MAXWELL & MOORE, INC. BRIDGEPORT, CONNECTICUT

Wilcox Strike, Oil at McKamie Highlight Tri-State Activity

By GEORGE WEBER

SHREVEPORT, La., Mar. 10.—Four wildcats in La Salle Parish are showing prospects of becoming field openers in the Wilcox formation in the most active week of new development in many months for North Louisiana. In addition to the Wilcox play, the deep Smackover lime producer at Lisbon is indicating important gas-condensate reserves, and the shallow Bellevue pool of Bossier Parish is believed extended. Arkansas also shows a spurt in new interest, with oil discovered in the McKamie field of Lafayette County, and possible new oil production deep in the El Dorado field of Union County.

Wilcox Play

According to reliable report, not yet confirmed by the company, the Placid Oil Co. 1 Tremont Lumber Co., 23-9-2e, is flowing oil from the Wilcox at 2,422-32 ft., about 635 ft. below the top of the formation. Placid is withholding information on the test, which is located in the Summerville area, 3 miles northwest of the town of Searcy. Peterson Petroleum Corp. opened the Summerville gas field in the Wilcox last year with 1 Tremont, about 1½ miles southeast of the Placid wildcat.

A second Placid wildcat in La Salle Parish, 1-B Goodpine, is also reported showing oil at 3,576-81 ft. This wildcat is located in 33-9-2e, 3 miles west of the Summerville gas field, near the town of Little Creek.

Big West Drilling Co. reports an oil sand at 3,124-32 ft., about 900 ft. below the top of the Wilcox. The wildcat is located in 25-8-2e, La Salle Parish, 3½ miles south of Searcy and 4 miles northwest of the Nebo field.

The fourth La Salle Parish wildcat showing oil production possibilities is Lion Oil Refining Co. 1 Goodpine, 25-9-1e, south of the old Georgetown field. Unlike the other three, which show oil several hundred feet below the top of the Wilcox, the Lion test has oil sand in the top of the formation, corresponding to production in the Tullos, Urania and Georgetown fields. A string of 7-in. casing was set last week at 1,671 ft. and perforations at 1,645-48 ft. were shot. The well swabbed and flowed in heads, making about 20 bbl. of oil daily. Its completion is awaiting installation of a pump.

This important week in Wilcox development follows several months of wildcatting throughout La Salle and adjoining parishes. Incited by discovery of oil at Olla and Nebo last year, wildcatting into the Wilcox has continued steadily, but with no important results until recently. The probable success of some of the current shows will accelerate the play throughout the area.

SUMMARY OF COMPLETIONS

North Louisiana

	No.	Bbl.	Footage
Oil wells: Caddo	1	50	1,550
Homer	1	30	1,374
Olla	2	187	4,647
Gas wells: Joaquin	1	*106	4,934
Cotton Valley	1	*2	8,634
Dry holes: Sugar Creek	1	.....	5,852
Wildcats	3	.....	14,733
Total	10	.....	41,724

Arkansas

Oil wells: Atlanta	1	720	8,297
Buckner	1	312	7,267
Nick Springs	1	300	3,793
Smackover	1	70	2,694
Dry holes: Wildcats	1	.....	1,407
Total	5	.....	23,458

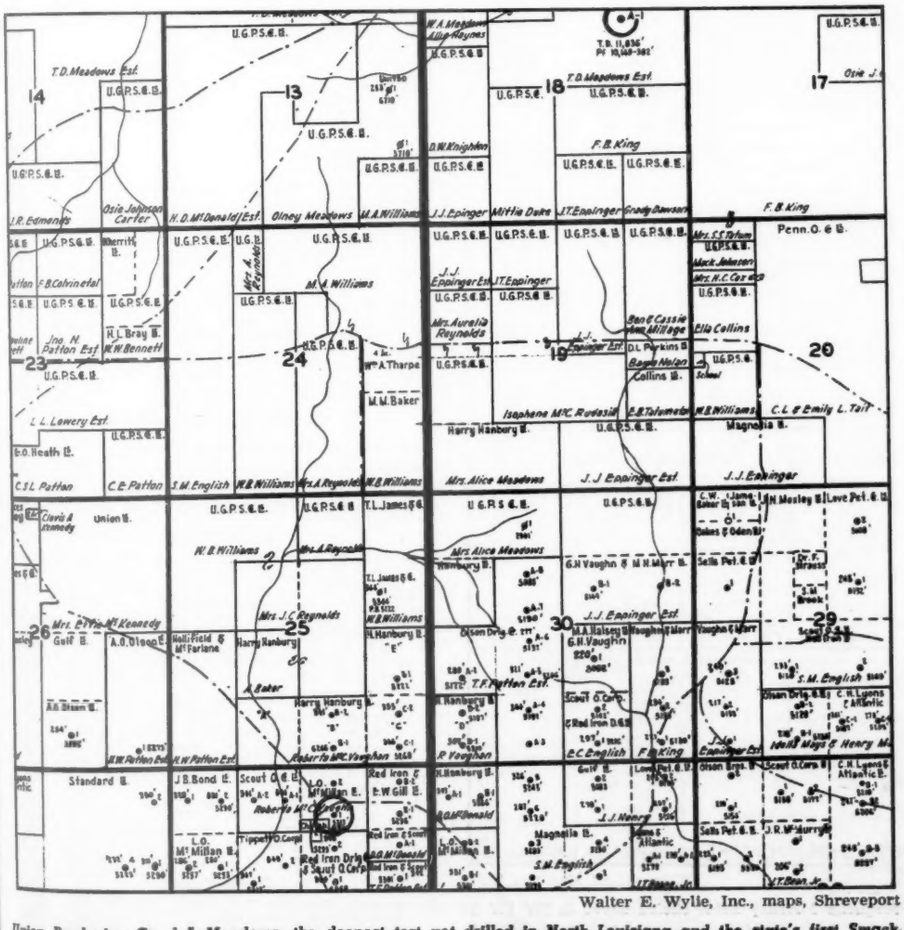
*Million cu. ft.

Lisbon Well

Union Producing Co. 1-A Meadows, whose location is shown in the accompanying map, is showing for an important gas-condensate producer. The test has two distinctions; the deepest test ever drilled in North Louisiana, and the first Smackover lime producer in the state. Operators last week perforated casing at 10,148-66 ft., 10,200-10 ft., 10,276-10,300 ft., 10,315-20 ft., and 10,324-98 ft., and the well came in making 422 bbl. of 55-gravity straw-colored condensate in 16 hours. The gage was made through a ¾-in. choke with tubing pressure at 2,350 lb., and casing pressure at 2,850 lb. At week's end the well was closed in, with shut-in pressure of 4,825 lb. Operators plan to acidize the colitic Smackover lime section and test the well over a period of several days. The test was carried to a total depth of 11,834 ft. where it encountered salt. Previous drill-stem test at 10,353-11,834 ft. showed a small amount of sweet gas. It is interesting to note that the condensate in the Smackover gage made early the past week was sweet.

Bellevue Extension

A possible 3-mile extension to the shallow Bellevue field is seen in the reported flow of oil from Roy Reese 1-A Bellevue Land Co., north of the field in Bossier Parish. The wildcat has 5½-in. casing set at 2,910 ft. and is bottomed at 3,001 ft.



Union Producing Co. 1-A Meadows, the deepest test yet drilled in North Louisiana and the state's first Smackover lime producer, is being tested after gaging 442 bbl. of condensate in 16 hours and some gas

NORTH LOUISIANA COMPLETIONS

Caddo—Caddo Parish

C. M. Bugley et al 1 Ober ..... SE SE NW 1-20-16
Pumped 50 bbl., 3,000 gal. acid, T.D. 1,550 ft., 7-in. casing 1,450 ft.

Wildcat—Catahoula Parish

H. L. Hunt 1 Anderson et al ..... SE SE 31-10n-6e
T.D. 5,213 ft., dry, top Wilcox 2,830 ft.

Homer—Claiborne Parish

Louark Prod. Co. 39 Lowenberg .... NE NE 24-21-8w
Pumped 30 bbl., T.D. 1,372 ft.

Sugar Creek—Claiborne Parish

Sugar Creek Syndicate et al 3 Robinson ..... SW SE NE 32-20-5w
T.D. 5,852 ft., salt water, top Travis Peak 5,680 ft.

Joaquin—De Soto Parish

Southern Prod. Co., Inc., 1 Frost Billingsley unit .. SW NE SE 1-11-16
106,000,000 cu. ft., open flow, R.P. 2,418 ft., porous lime 4,828-4,933 ft., 7-in. casing 4,776 ft., T.D. 4,934 ft.

Wildcat—Grant Parish

Smith, Lloyd et al 1 Swope Est. .... SE NW 16-9-1e
T.D. 4,008 ft., dry, top Midway 3,935 ft.

Olla—La Salle Parish

Ark. Fuel Oil Co. 3-C Kees ..... NW NE 7-10-3e
Pumped 65 bbl., 4 per cent salt water, T.D. 2,222 ft., 7-in. casing 2,222 ft., perf. 2,185-96 ft., upper Central sand, Wilcox.

Placid Oil Co. 83 La. Central ..... SE SW 30-10-3
135 bbl., 8 per cent salt water, 14/64-in. choke, T.P. 80 lb., C.P. 350 lb., T.D. 2,425 ft., 7-in. casing 2,423 ft., perf. 2,228-36 ft., upper Central sand.

Wildcat—La Salle Parish

Louark Prod. Co. 1 Tensas Delta Land Co. ..... SW SE 27-6n-4e
T.D. 5,512 ft., dry.

(Continued on Page 87)

By
ROBERT INGRAM

Logan County Pool Opener Makes Several Good Flows

DIRT-RED territorial buildings of the town of Guthrie, Logan County seat, were ablaze one night last week as the townspeople held open house in honor of a new oil field a few miles to the east. Although it lies on the exact geographical center of the state, Guthrie has somehow stayed on the fringe of the big time.

After losing the state capital to Oklahoma City in 1910, the town has watched lesser communities lurch into prosperity after discoveries of oil and has periodically enthused over nearby wildcats. However, only once, when the Langston pool was opened in 1933, has oil come really close to the county seat and then the boosters were chagrined that the pool was not named Guthrie. The rest of Logan County's eight oil pools are almost too far away to count.

But this week Guthrie had a first-class oil pool all its own. Elmo Thompson, executive vice president of Sunray Oil Co., operators of the jointly owned 1 Donoghue discovery well, announced he had asked the oil-field nomenclature committee of the Mid-Continent Oil and Gas Association to call the new strike the Guthrie pool. The committee said the name was a foregone conclusion.

SUMMARY OF COMPLETIONS

	No.	Bbl.	Footage
Oil wells: Cumberland	1	366	5,077
Dill	1	84	3,430
St. Louis	1	250	3,987
West Hewitt	4	1,356	8,750
Other fields	6	1,785	22,269
Wildcats	1	44	3,192
Gas wells: Fields	2	*106	5,225
Wildcats	1	*5	7,025
Dry holes: St. Louis	2	.....	8,824
Other fields	1	.....	2,986
Total	20	.....	70,765
Recompletions	4	778	.....

*Million cu. ft.

Continental Providing Outlet

And at a banquet in honor of the celebration, William J. Armstrong, associate member of the state Corporation Commission, struck a boom note by telling the crowd that operators of the 1 Donoghue would be permitted to produce all the oil they could without waste. What amount this would be was still conjecture at week's end. Pipe-line crews struggled through shin-deep mud to make connections with Continental's line running north from Oklahoma City, and until their job was finished, no 24-hour gage could be taken.

The 2,000 bbl. of tankage erected on the lease had been nearly filled by preliminary tests. While crews ran tubing to within 90 ft. of the 5,425-ft. total depth, the well flowed 763 bbl. by heads in 9½ hours, and when it was first opened into the tanks, it flowed 267 bbl. in 2 hours.

Speculation as to the possible extent of the new Guthrie pool was hazardous, but there was general agreement on two important conditions: (1) All of the several geophysical interpretations of the structure put the 1 Donoghue northwest of the high. (2) Little relation to the Langston pool, whose 300 acres have produced some 990,000 bbl. in 7 years from the first Wilcox sand at 5,072 ft., was believed to exist.

However, the structural and stratigraphic similarity of the Langston and Guthrie pools was sufficient that there was good reason to believe production might be found later at Guthrie from the Bartlesville, topped at 5,042 ft., and the Misener at 5,132-55 ft. Both showed saturation in cores and in the electric log. At Langston, the Hunton zone, lying under the Misener, was opened to production this week at Amerada 2 Fouts, SE NE NE 14-17-1w, which was plugged back from the first Wilcox at 5,180 ft. to the Hunton at 4,880-97 ft. After acid the 2 Fouts tested for 712 bbl. a day. Eason 2 Smith, NW NW NW 13-17-1w, at Langston, had also plugged back this week to the Hunton, and further recompletions in the field were expected.

Plans for development at Guthrie are already under way with drilling contractors and company operating departments figuring costs for wells in the near future for Sinclair Prairie one location north, Continental one location west, and Sunray to the south.

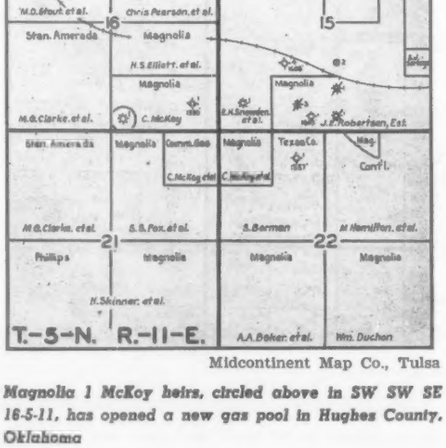
Oologah Dam Hearing

In striking contrast to the celebration at Guthrie, oil operators 100 miles to the east, whose properties were booming the same year Guthrie lost the state capital, crowded into the District Court room at Claremore to protest what they said was a threat to their continued operation. (See p. 25.)

The area in which they operate, Washington, Nowata and Rogers counties in the northeast part of the state, has long since been turned over to stripper operators and water-flood projects. The threat of the proposed Oologah flood-control dam to their continued operation drew attention of the industry to the fact that some 1,250 new wells for water-flood projects have been drilled on 5,300 acres since 1935; that water flood has upped production of the three counties from 2,890,000 bbl. in 1934 to 5,037,000 bbl. in 1940, and that every month applications to develop new water-flood projects in the area are filed with the state Corporation Commission. It also drew attention to older areas in the state which are fast approaching the secondary recovery state.

Meantime new oil was found in Seminole County at Wendell Hall 1-A Jackson, new gas in Hughes County at Magnolia 1 McKoy heirs (see completions below); new oil was showing in Seminole County at C. C. Cummings and Sunset Oil Co. 1 Brown and in the Chickasha gas field, Grady County, at Skelly 5 Edmundson, and a play was building up around Clyde Dorr et al 1 Riley in Oklahoma County on the basis of high tops (see drilling report below).

Leasing and wildcatting continued, particularly in Logan County, Okfuskee County and in the far southwest corner of the state where the Hobart and West Hewitt pools are fast developing. Attention was also centered on Osage County where Carter Oil Co. and Norbla Drilling Co. staked location for a test in SW SW SW 23-25-6, and major company scouts, who have long neglected the area, were again turning in reports.



Midcontinent Map Co., Tulsa

Magnolia 1 McKoy heirs, circled above in SW SW SE 16-5-11, has opened a new gas pool in Hughes County, Oklahoma

AVERAGE DAILY PRODUCTION

LEADING OKLAHOMA FIELDS

	Mar. 8
Allen	4,650
Billings	6,250
Burbank	7,350
South Burbank	7,450
Balance Osage	16,500
Blackwell district	3,500
Bristow-Slick	6,375
Chandler	975
Crescent	2,025
East Cromwell	2,625
Cromwell	2,975
Cumberland	4,425
Cushing-Shamrock	8,950
Duncan	3,650
Edmond	3,500
Fish	2,750
Fitts	12,600
Jesse	1,875
Graham-Fox	2,200
Gray	950
Healdton	8,600
Hewitt	8,125
Keokuk	2,925
Konawa	1,075
Lucien	5,650
Moore	975
Northeastern counties	16,750
Oklahoma City	95,050
Olympic	1,775
Ramsey	3,350
Sasakwa	1,350
Sholem-Alechem	2,600
Seminole district:	
Bowlegs	6,225
Carr City	2,175
Dora	1,450
Earlsboro	3,950
East Earlsboro	1,725
South Earlsboro	500
Little River	6,425
East Little River	650
Mission	1,275
Seminole	6,475
East Seminole	1,100
Searight	1,825
Total Seminole	33,775
St. Louis-Pearson	20,250
Tatums-Tussy	5,250
Tonkawa-Garber-Thomas	3,500
Wewoka	1,625
Yale-Jennings	3,200
Total Oklahoma	402,850

OKLAHOMA COMPLETIONS

Bryan-Marshall Counties

Cumberland pool: Pure 1 Thompson-205, SW SE SW 21-5s-7e, flowed 366 bbl. in 4 hr. through 1-in. choke, bromide, 4,597 ft., first sand zone 4,873 ft., 7-in. casing 4,870 ft., second sand zone 4,987 ft., T.D. 5,077 ft.

Caddo County

Cement pool: Tom Palmer 5 Dixon, NE SE NW 35-6-10w, potential 735 bbl., sand 3,350-3,420 ft., T.D., 7-in. 3,340 ft.

Carter County

West Hewitt pool: Porterfield Bros. 4 Walker, SW SE 17-4s-2w, pumped 130 bbl., T.D. 2,208 ft., 7-in. 2,157 ft., sand 2,157-2,206 ft., shot 2,166-2,206 ft.
Smith 2 Ward, NW NE NE 19-4s-2w, pumped 40 bbl., 7-in. 2,203 ft., sand 2,267 ft., T.D., shot 2,215-75 ft.
Smith 5 Ward, N½ S½ SE SE 18-4s-2w, flowed 250 bbl. pinched, est. 500 bbl., T.D. 2,166 ft. in limestone, sand 2,078-80 ft., sand 2,093-2,113 ft.
Smith 6 Ward, SE SE 18-4s-2w, flowed 186 bbl. pinched, est. 500 bbl., T.D. 2,098 ft., 7-in. 2,045 ft.
Walter Neustadt 3 Choate, NW SE SE 18-4s-2w, location abandoned.

Creek County

Deep Fork pool: Tibbens Oil 4 Wilson, NW SW SE 18-4-9, flowed 88 bbl., 6-in. 2,380 ft., Prue 2,385-2,407 ft., shot 2,384-2,405 ft., T.D. 2,410 ft.

Grady County

Knox pool: Magnolia 7 Harrison, SE NE 28-3-5w, old well drilled deeper from 2,461 ft. to 2,489 ft., P.B. 2,463 ft., pumped 20 bbl.
Chickasha gas: Sinclair Prairie 6 Charlson, SW SE 22-5-8w, 104,000,000 cu. ft. gas, 1,875 lb. R.P., Char-

son zone 4,260-4,305 ft., sand 4,340-70 ft., perf. 4,340-4,400 ft. and 4,260-4,325 ft.

Hughes County

Wildcat: Magnolia 1 McCoy heirs, SW SE 16-5-11, est. 10,750,000 cu. ft. gas, some distillate, 2,100 lb. R.P., T.D. 7,025 ft., P.B. 5,424 ft., Cromwell 5,360-5,405 ft., D.S. test 5,341-5,424 ft., open 12 min., est. 5,000,000 cu. ft. gas, 2-in. 5,393 ft., S.I.

Kay County

Dilworth pool: National Union 1 Long, NW NW 20-28-1, old well drilled deeper from 1,670 ft. in Wilcox to 3,372-76 ft., pumped 83 bbl.

Kiowa County

Hobart pool: McIntyre 3 Watkins, SW NW NW 20-7-17w, est. 2,000,000 cu. ft. gas, 10-in. 151 ft., limestone 850-55 ft., T.D. 900 ft.

Okfuskee County

Cromwell pool: Kewanee 1 Replogle, NE NW NE 2-10-8, flowed 160 bbl., sand 3,487 ft., 7-in. 3,485 ft., T.D. 3,500 ft., P.B. 3,499 ft., shot 3,494-97 ft.

Reese 1 Replogle, NE NE 2-10-8, flowed 45 bbl., T.D. 3,495 ft., Cromwell 3,475 ft., 7-in. 3,460 ft., shot 3,464-84 ft.

Dill pool: Sunray 2 Replogle-Miracle, NE NW SE 35-11-8, pumped 84 bbl. oil and 21 bbl. water, Cromwell 3,410 ft., 5-in. 3,412 ft., shot 3,422-30 ft.

Oklahoma County

Oklahoma City: British American 4 Military, SW NE SW 34-12-3w, pumped 730 bbl. plus 4 per cent water, 9-in. 6,379 ft., Simpson 6,384 ft., Wilcox 6,411-6,522 ft., T.D., shot 6,460-6,518 ft.

Payne County

Ramsey pool: Stanolind et al 2 Walters, NW SW NE 18-18-2, old well P.B. from 4,848 ft. to 4,777 ft., perf. 4,610-30 ft., flowed 415 bbl., 16 per cent b.s., through 1-in. choke.

Pottawatomie County

St. Louis district: Smith 2 Bray, SW NW 5-7-4, flowed 250 bbl. pinched, Hunton 3,958 ft., 7-in. 3,958 ft., T.D. 3,987 ft.

H. Phillips 2 Bettis, NW SE SW 21-7-4, old well drilled deeper from 4,150 ft. to 4,290 ft., 5-in. 4,270 ft., Wilcox 4,270 ft., pumped 260 bbl. oil and 260 bbl. water.

King 1-C Caudle, NW NW 24-7-4, dry, T.D. 4,273 ft., perf. and acid in Viola 4,005-09 ft., swabbed 16 bbl. oil and 100 bbl. water.

Bay Oil 1 Porter-B, NE SE SW 24-7-3, dry, T.D. 4,551 ft., Woodford 4,035 ft., Viola 4,495 ft., Trenton 4,535 ft.

Seminole County

Hazel pool: A. Z. Phillips 1 Church, NE NW SW 36-7-5, dry, T.D. 2,986 ft., Earlsboro, Senora lime 2,695 ft., sand 2,815-49 ft.

South Konawa pool: Culver 2 Wilmott, SW SW 3-5-5, location abandoned.

Seminole district: Stanolind 2 H. A. Baird, SW SE NW 15-9-6, flowed 27 bbl., Senora sand 2,883-2,913 ft., 5-in. 2,884 ft., T.D. 2,922 ft., shot 2,898-2,913 ft.

Wildcat: Weldon Hall 1-A Jackson, N½ NE SE 14-7-7, pumped 44 bbl., T.D. 3,192 ft., shot sand 3,168-92 ft.

OKLAHOMA DRILLING REPORT

Creek County

Link 1 Kinch ..... NE SW NE 25-16-7
Pink limestone 2,834-36 ft., Bartlesville 3,025-95 ft., no Dutcher, Mississippi 3,315 ft., drilling 3,425 ft. in Mississippi.

L. B. Jackson 1 Hannah Prince .. SE SE NE 26-19-9
S.D. 90 ft.

Bryan Petroleum Co. 1 Corbray..NE NE NW 34-19-9
16-in. 550 ft., S.D.

Grady County

Skelly 5 Edmundson .....N½ NW NW 23-5-8w
Swabbed some oil from perf. 4,930-5,300 ft., T.D. 5,402 ft., 2,700 ft. fluid in hole, testing.

Jackson County

Mutual 1 Caves ..... E½ NW NW 36-4-21w
Drilling 1,110 ft., show gas 1,070 ft.

Jefferson County

Hampton-Stelley 1 Pealor.....NW NE NW 33-7n-6w
Drilling 4,144 ft.

Kiowa County

Artie Baker 1 Coakley .....NW NE SE 30-7-17w
T.D. 1,287 ft., Granite wash, P.B. 1,235 ft., acid, made head flow in pits, S.I. to test.

Logan County

J. E. Jones et al 1 Basserman....SE NE SE 22-15-3w
First report.

Noble County

Adams et al 1 Albright .....SW SW SE 31-23-2w
T.D. 1,251 ft. in limestone, hole full of water and underreaming 6-in.

Okfuskee County

Texas 1 Butcher ..... NW SE NW 15-12-9
First report.

K.G.F.F. 1 Camp ..... SW SW SW 6-11-9
Earlsboro 2,489 ft., Booch 3,070-90 ft., Gilcrease 3,239-49 ft., unconformity Cromwell 3,410 ft., Mayes 3,765 ft., Woodford 3,890 ft., cored stained sand slight salt taste 3,075-87½ ft., cored black stained sand, good odor 3,241-47 ft., drilling 3,905 ft.

Alma et al 1 Replogle .....NW SW NW 14-10-11
P.B. 3,125 ft.

Oklahoma County

Clyde Dorr et al 1 Riley ..... NE N ESE 34-13-17
Belle City 3,610 ft., Hogshooter 4,080 ft., Layton 4,125 ft., Checkerboard 4,420 ft., Cleveland sand zone 4,440 ft., Pay sand 4,660 ft., drilling 5,110 ft.

Osage County

Dave Malernee 1-A Lucas ..... NW SE NW 28-21-9
Broken sand 1,670 ft., T.D. 1,728 ft., show gas, S.D.

Dillard 1 Osage ..... SE NW NW 22-21-9
Drilling 265 ft.

Superior 1 Osage ..... NW SE SW 23-22-8
Water sand 550-85 ft., 12½-in. 685 ft., drilling 1,100 ft.

Pottawatomie County

Grisso & Eason 1 Rayster .....SW NW NW 33-6-3
Drilled out plug to 2,894 ft., to perf.

(Continued on Page 78)

GOODHOPE is good news for oil men!

(Aerial Photo of Goodhope Terminal)

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A DIVISION OF GENERAL AMERICAN TRANSPORTATION CORPORATION

Deep Lime Trend Indicated By New Archer Discovery

By
R. MARNE SANFORD

WICHITA FALLS, Tex., Mar. 10.—The definite opening of a new field in northern Archer County, one which will undoubtedly have more direct bearing on the extension activities of the Hull-Silk field than on normal new field development, was seen the past week.

The discovery is King Oil 1 Taylor, Block 13, A.T.N.C.L. Survey, about 3 miles northeast of the Mankins Deep field and only 2½ miles southwest of the vast and rapidly expanding Hull-Silk field. Production in the new discovery is from the Mississippian lime from 4,920-40 ft. The wildcat has been in the testing stages for about 3 weeks, there first being saturation indicating production drilled from 5,185-5,208 ft. in the Caddo lime. For the past few weeks production has been sought from both of the saturated zones, but only the deeper Mississippian lime will figure in its final completion. The lower zone has been shot with 40 qt. and the well is being tentatively estimated at about 100 bbl. daily, pumping.

Significant is the fact that some saturation was found in both the Caddo lime and the Mississippian lime and also that there is now, more definitely than ever, a deep trend of production extending across the entire northern part of Archer County. Just south of Wichita Falls and in the extreme northeastern corner of the county is the Vogtsberger field opened last year to production from the Strawn level at 4,700 ft. About 5½ miles farther southwest is the vast Hull-Silk field extending in a northeast-southwest trend direction for some 8 miles. The new Mississippian lime discovery is only 2½ miles southwest on the direct trend from the Hull-Silk field, and only about 4 miles further southwest is the Mankins Deep field opened in 1939. This latter field produces from the Caddo lime from about 4,675 ft. No accurate geological correlations have yet been made between these four fields along the trend. However, excellent possibilities appear to be present for finding either Strawn or Mississippian or, most likely, Caddo lime production, along the entire trend. At present the development of the Caddo lime level in the Hull-Silk field is centering a good portion of the field's drilling, this deep level having been opened less than a yar ago.

SUMMARY OF COMPLETIONS

North Texas

	No.	Bbl.	Footage
Oil: Hull-Silk field	3	1,675	12,762
K.M.A. field	5	1,005	19,695
Olney field	3	258	2,692
Other fields	11	4,395	33,834
Gas: Young field	1	*4	2,540
Dry: Fields	7	.....	15,002
Wildcats	8	.....	25,785
Total	38	.....	112,310

West Central Texas

Oil: Fields	4	214	8,134
Gas: Fields	1	*1.79	552
Dry: Fields	2	.....	2,060
Wildcats	4	.....	7,644
Total	11	.....	18,390

*Million cu. ft.

Montague County Wildcats Started

Sinclair Prairie Oil Co., one of the leaders in the deep-development play of the past year in North Texas, and also one of the companies to actually reap profitable returns for its wildcat explorations, has spudded its sixth deep wildcat in Montague County. It is 1 Clingingsmith, Section 149, Belcher subdivision, 4 miles southeast of Nocona, in the northwestern part of the county. Contract depth is 6,500 ft.

Some 5 miles south of Ringgold the recently staked Benson & Benson 1 Seay, Owensby Survey, scheduled 6,200-ft. wildcat, is preparing to start the early part of this week. Rig has been moved to location.

A new deep operation for Montague County is the Deep Oil Development Co., L. H. Cullum and associates, and Chapman & McFarlin 1 Mose Fowler, 4 miles northeast of Stoneburg. The location is 2,385 ft. from the south and east lines of a 3,122-acre tract in the R. M. Davis Survey. The nearest production is the Ringgold field to the northwest.

K.M.A. Ellenburger Extension Gaged

Completion gage has been recorded on the Shell and Phillips 14-A Preston, Section 20, Block 7, H.&T.C. Survey, 1-mile northwest extension to the deep Ellenburger lime pay in the K.M.A. field, Wichita County. It gaged 74 bbl. in 3 hours through ¼-in. choke from pay drilled from 4,474-4,503 ft. The completion was at the rate of almost 600 bbl. daily. This completion is not as large as the original discovery well, however, it is one of the better wells in the deep pay.

NORTH TEXAS COMPLETIONS

Archer County

Wildcat: Adams Oil & Gas 1 Powell, Sec. 1, Lot 14, S.P. Sur., Abst. 406, top Caddo lime 4,987 ft., dry at 5,261 ft.
Hull-Silk field: Cox & Hamon 6-D Little "Big," 38 bbl. in 1 hr., ½-in. choke, est. 675 bbl. daily, 4,351-4,416 ft.
King Oil 9 Wilson "E," 43 bbl. in 3 hr., ¾-in. choke, est. 275 bbl. daily, 3,756-3,809 ft.
Peterson & McCarty 41 Wilson "B," 49 bbl. in 1 hr., ¾-in. choke, est. 725 bbl. daily, top Caddo 4,602 ft., 2,000 gal. acid from 4,520-37 ft.
Archer field: Home Oil 3 Meade, dry at 973 ft.

Baylor County

Seymour field: British American Oil 4 Turbeville, 212 bbl. in 8 hr., est. 525 bbl. daily, 2,500 gal. acid from 2,524-28 ft.

Clay County

McInnes field: Sussex Oil 2 McInnes, dry at 1,283 ft.
Kimmell Lee & Co. 18 Firestone, dry at 375 ft.
Wildcat: T. A. Norwood 1 Bently, Sec. 51, Specht & McCutchins subd., dry at 1,253 ft.

Cooke County

Walnut Bend field: Sinclair Prairie 4 Timmis, 80 bbl. in 7½ hr., pumping, est. 175 bbl. daily, 5-qt. shot from 4,887-4,910 ft.
Cooke field: Metzner & McKee 3 Henscheid, 20 bbl., pumping, daily, 767-75 ft.
Voth field: C. J. Bohner 2 Sicking, 10 bbl. pumping, daily, 1,282-1,315 ft.
Wildcat: R. B. Farris 1 Houston, Charles DeMorse Sur., Abst. 332, top Ellenburger 1,535 ft., dry at 1,537 ft.

Jack County

Bryson field: Maracaibo Oil 3 Owen, 338 bbl. daily, ½-in. choke, naturally, 3,141-63 ft.

Montague County

Montague field: Gulf 1 Maddox, dry at 1,245 ft.
Benton & Holmes field: United Producers and Continental 2 Custer, 81 bbl. in 3 hr., ½-in. choke, naturally, estimated 500 bbl. daily, perf. casing 2,282-90 ft.
Bonita field: Sinclair Prairie 3 Doty, top Caddo 5,162 ft., conglomerate 5,255 ft., dry at 5,412 ft.
Rogers & Rogers field: Chapman & McFarlin 1 Dodson, 71 bbl. in 3 hr., ½-in. choke, 5,000 gal. acid and 30-qt. shot from 5,100-07 ft., P.B. from 5,135 ft.
Wildcat: J. G. Hammond 1 Jester, Sec. 1396, T.E.&L. Sur., top Caddo 6,282 ft., Barnett 6,850 ft., Mississippian 7,164 ft., dry at 7,176 ft.

Tarrant County

Wildcat: Bruce Sullivan and Hill & Hill 1 Putnam, Gilbert Sur., 4 mi. N Fort Worth, top Barnett 7,140 ft., Viola 7,463 ft., Simpson 7,563 ft., T.D. in Ellenburger lime (top uncalled) at 7,836 ft., dry.

Wilbarger County

Fargo field: Amerada Pet. 1 Foley, 74 bbl. in 3 hr., ½-in. choke, est. 300 bbl. daily, 60-qt. shot 3,985-4,000 ft.

Wichita County

Wichita field: Akin-Dimmock & Costley 2 Dodson "A," 34 bbl. daily, pumping, naturally, 1,309-14 ft.
K.M.A. field: Consolidated Oil 1 Barnes "M," 75 bbl. daily, pumping, naturally, 4,041-48 ft. and 4,058-78 ft.
Deep Oil Development Co. and Perkins 1 Straus "B," 61 bbl. in 2 hr., ¾-in. choke, est. 375 bbl. daily, 170-qt. shot from 3,853-92 ft.
Dillard 12 Kemp & Kempner, dry at 3,895 ft.
Golding & Cochran 10 Preston, 93 bbl. in 3 hr., ¾-in. choke, est. 350 bbl. daily, 50-qt. shot from 3,958-80 ft.
Hanlon-Buchanan 1-AA Burnett "A," dry at 889 ft.
Mid-Union Drilling Co. 6 Fassett & Tuttle, 43 bbl. in 4 hr., ¼-in. choke, est. 150 bbl. daily, 150-qt. shot from 4,025-65 ft.
Wildcat: King Oil 1 Ancell, L. C. Gibbs Sur., Abst. 390, 55 bbl. daily, 1,500 gal. acid and 250-qt. shot from 3,621-80 ft. (K.M.A. extension well).

Young County

Wildcats: Hayden 1 Casey, Sec. 1396, T.E.&L. Sur., dry at 930 ft.
E. L. Orr 1 Edwards, Sec. 1481, T.E.&L. Sur., dry at 920 ft.
L. T. Burns 1 Bailey, Jr., Sec. 60, T.E.&L. Sur., dry at 872 ft.
Zweifel field: Henry Zweifel 1 Steele, 403 bbl. in 18 hr., ½-in. choke, est. 425 bbl. daily, 3,500 gal. acid from 4,149-62 ft.
Henry Zweifel 1 Parson, 404 bbl. in 6 hr., ⅝-in. choke, naturally, 4,208-42 ft.
Olney field: Petroleum Prod. 5 Rogers "A," dry at 930 ft.
Hazel B. Sparks 6 Clark, 80 bbl. daily, pumping, naturally, 879-93 ft.
P. B. Worthington 2 Rogers, 98 bbl. daily, pumping, naturally, 874-95 ft
J. T. Harrell 1 Rogers "A," 80 bbl. daily, pumping, naturally, 894-904 ft.
Young field: L. A. Long 1 Stovall & Son "C," 4,000,000 cu. ft. gas 2,499-2,506 ft. and 2,535-40 ft.

NORTH TEXAS WILDCAT REPORT

Archer County

W. B. Hamilton 22 Cartwright, 660 ft. from W and S lines, James Webb Sur., Abst. 664, T.D. 5,211 ft., P.B. 5,164 ft., 60-qt. shot 5,149-61 ft., swabbing est. 10 bbl. oil per day, S.D. 5,211 ft.
Walter Gant 1 Hunter, SE NW Sec. 7, Blk. 1, H.&T.C. Sur., top Ellengurger 5,370 ft., T.D. 5,391 ft., P.B. 5,343 ft., tested dry, P.B. 5,203 ft., treated 3,000 gal. acid, no results, cemented back to 5,126 ft.
King Oil 1 Taylor, Lot 1, Sec. 13, A.T.N.C.L. Sur., top Ellenburger 4,963 ft., T.D. 5,055 ft., P.B. 4,700 ft., S.I. for 8 hr., open to test 9 bailers oil and 2 bailers water, cemented off all perf., may drill out and retest.
Deep Oil and Christie 1 G. Moer, SW SW Sec. 21, Clark & Plumb Sur., Blk. 3, top Caddo 4,356 ft., T.D. 5,433 ft., prep. P.B. to test upper levels.
W. B. Hamilton 1 C. E. Graham C, SE part of Gibenrath Sur., Abst. 136, 2,000-ft. test, S.D. 1,975 ft., prepare to drill deeper.
Jack Story, Jr., 1 L. F. Wilson, NE Lot 4, Sec. 86, A.T. N.C.L. Sur., 1,600-ft. test, show oil 1,543-50 ft. in sand, installing pump 1,550 ft.
Home Oil 1 Spain, NE Sec. 8, Meade Pasture subd. 55, 1,400-ft. test, location.
Consolidated Oil 1 Humphrey, 467 ft. from S and W lines of E. S. Heath Sur., Abst. 176, 4,400-ft. test, S.D., weather, 3,532 ft.
Petroleum Producers 1 M. Lynch, 2,310 ft. from W and 330 ft. from S lines, Sec. 20, Palo Pinto C.S.L. Sur., top K.M.A. lime 3,940 ft., top Ellenburger 4,860 ft., drilling 4,978 ft.
George Keith 1 Prideaux, SW Sec. 1867, T.E.&L. Sur., 900-ft. test, 10-in. 176 ft., T.D. 450 ft. last report.
Magnolia 1 Hayton, SE SE SE Sec. 2415, T.E.&L. Sur., 5,400-ft. test, show oil 1,395-1,408 ft., tested water, drilling 3,047 ft.

Baylor County

Hattie B. Madden 2 J. J. James, Sec. 150, T.&N.O. Sur., show oil 1,352-63 ft., lost drill pipe 2,308 ft., S.D.
Rogers & Lanfair 1 Howe, J. Howe Sur., Abst. 572, show oil 1,445-52 ft., S.D. 3,115 ft., T.D., may drill deeper.

Clay County

Carlos Wagner 1 L. C. Thaxton, Sec. 2, T.&N.O. Sur., 6,500-ft. test, top Caddo 5,917 ft., coring 5,925 ft.
Bridwell Oil 1 W. H. Myers, C. Thompson Sur., Abst. 444, 5,500-ft. test, drilling 4,944 ft.
Gulf 1 C. W. Scaling, NW NW Sec. 31, T.&N.O. Sur., Abst. 685, 6,000-ft. test, drilling 3,845 ft.
L. T. Burns 1 Southerland, NE cor. of 100 acres, of Sec. 63, J. H. Belcher Sur., 5,500-ft. test, show oil 3,793-3,807 ft., T.D. 4,765 ft., broken shows of oil 4,065 ft. to T.D., prepare to test.
L. W. Stanford 1-A Edrington, 8,689 ft. from S and 150 ft. from E lines of F. W. Grassmeyer Sur., Abst. 694, 1,200-ft. test, prepare spud, S.D. for weather.
T. A. Norwood 1 Hansard, 1,736 ft. from N and 914 ft. from W lines of lease in Thornberry subd., 1,250-ft. test, T.D. 1,144 ft., show oil, prepare to test.
L. T. Burns 1 Fred Wines, 593 ft. from N and 476 ft. from E lines of Sec. 1, Halsell sub. No. 1, 5,500-ft. test, location.

Cooke County

Texas Co. 1 Bindel, 1,530 ft. from N and 330 ft. from W lines of Francis Hughes Sur., Abst. 439, 3,000-ft. test, location.

Hood County

W. G. Martin 3 W. G. Thorman, E cor. of 2,956-acre ranch, F. F. Anderson Sur., 5,000-ft. test, spudded and S.D.
Aztec Oil 1 Gallagher, SW SE Robert Alway Sur., 3,000-ft. test, S.D. orders 2,200 ft.

Jack County

Continental 1 Robertson, M. J. Swan Sur., Abst. 1659, top Ordovician 5,380 ft., T.D. 5,577 ft., P.B. 5,514 ft., swabbing est. 50 bbl. oil per 7 hr. but will not flow.
R. A. Conkling 1 M. Hoffle, A. James Sur., Abst. 318, 3 mi. S of Antelope, 3,500-ft. test, T.D. 3,128 ft., pulled 7-in., will rerun after reaming hole, S.D., weather, 3,165 ft.
K. N. Davis 1 Jones, N Wcor. E½ Sec. 2555, T.E.&L. Sur., 1 mi. SE Perrin, 2,500-ft. test, moving in rig.

Harper-McClintock 1 Kinder, 1,400 ft. from E and 467 ft. from N lines, Sec. 2667, T.E.&L. Sur., 6⅝-in. casing 1,640 ft., S.D., weather.
O. J. Perrin 1 Brumbelow, 1,045 ft. from S and 720 ft. from E lines, H. C. Ayers Sur., Abst. 4, S.D. 3,505 ft. after electrical survey.
Continental 1 Johnson, N part of D. D. Burton Sur., Abst. 1671, 5,500-ft. test, drilling 4,961 ft.
Reed & Craft 1 Richards, 467 ft. from W and 1,200 ft. from N lines of C. Gates Sur., Abst. 237, 3,500-ft. test, location.
C. H. Peterson 1 Hoefle, SE cor. John W. Barrett Sur., Abst. 48, 500-ft. test, 8-in. at 228 ft., 7-in. at 325 ft., show oil 340-42 ft., 438-44 ft., T.D. 444 ft.
Adam Grafe 1 H. R. Bloodworth, 6,986 ft. from S and 3,244 ft. from N lines, William McDonald Sur., Abst. 380, 3,500-ft. test, moving in material.

Montague County

Walter Gant 1 Will Laird, R. T. Millard Sur., Abst. 470, 7 mi. W of Sunset, T.D. 6,651 ft., P.B. to 6,596 ft., perf. casing 4,865-73 ft., best gage for 125 bbl., swabbing in 6 hr. after S.I. for 10 days, rotary moved off, S.D.
T. F. Hunter and Wilcox O. & G. 1 Barcas, SE Sec. 78, Kaufman C.S.L. Sur., Abst. 407, show oil 3,961-87 ft., 4,329-33 ft., 4,340-43 ft., 4,351-52 ft., conglomerate show oil 4,359-96 ft., S.D. 4,500 ft.
Redman Brothers 1 Hardy, 225 ft. from N and E lines of 41-acre tract in Fielding Secrest Sur., Abst. 665, 2,500-ft. test, S.D., weather, 1,813 ft.
Omohundro 1 Parr, 1,400 ft. from S and 467 ft. from W lines of 693-acre tract, G. Timmons Sur., Abst. 727, top Caddo 5,675 ft., show oil 5,699-5,710 ft. and 5,800-04 ft., drilling 5,871 ft.
Benson & Benson 1 Seay, SE SE SE Sec. 31, Blk. 4, H.&T.C. Sur., 4,000-ft. test, first report.
Sinclair Prairie 1 Clingingsmith, 467 ft. from S and W lines of Sec. 149, Jose Olabarri Sur., Abst. 579, 6,000-ft. test, derrick.

Throckmorton County

Rathke Oil 1 Swagerty, 495 ft. from N and 746 ft. from E lines of SW¼ Sec. 258, B.B.B.&C. Sur., 5,000-ft. cable-tool test, first report.
Homer Moore and J. E. Dodson 1 J. O. Crump, Blk. 956, T.E.&L. Sur., location.
Humble 1 Allie McKnight, 1,100 ft. from N and 660 ft. from E lines, Sec. 2, D.L.&C. Sur., Abst. 1264, 5,000-ft. test, top Caddo 4,021 ft., show oil 4,028-42 ft., coring.
A. B. Bissey 1 W. L. May, NW SW Sec. 916, T.E.&L. Sur., Abst. 322, 610-ft. test, location.
Humble 1 Durham, NW NW Sec. 1627, T.E.&L. Sur., top Caddo 4,182 ft., T.D. 4,428 ft., P.B. 4,241 ft., perf. 4,230-35 ft., treated 2,000 gal. acid, swabbed 8 hr. and returned 11 bbl. oil and 33 bbl. water, still testing.

Wichita County

R. H. Larsen 1 Karrenbrock, 675 ft. from N and 625 ft. from E lines of J. Aldredge Sur., Abst. 4, first report.
Underwood 1 E. D. Owens, SW SW Sec. 40, Specht & McCutchin subd., 1,250-ft. test, location.

Wilbarger County

W. H. Gant 1 Mock, Sec. 23, Blk. 11, H.&T.C. Sur., 6,000-ft. test, drilling 4,000 ft.
Ray Brothers 1 Henry Streit, 72-acre tract in S. N. Gosnel Sur., Abst. 1231, S.D. 2,058 ft., carried 7-in. casing to T.D.
Omohundro 1 Jones, C Sec. 29, Blk. 16, H.&T.C. Sur., 5,500-ft. test, location.

Wise County

Manahan Oil 1 E. R. Collier, J. M. Wade Sur., Abst. 868, corrected depth 7,500 ft., prepare to drill ahead below 6,047 ft., repairing rig.

Young County

E. Lennington 1 Perry, 165 ft. N of C of river and 46 ft. from W line of 126-acre A. W. Perry farm in Oliver T. Brown Sur., Abst. 25, S.D. 165 ft.
Ben H. Rankin 1 Mary Logan, SW part Blk. 2, J. W. Doty Sur., 8 mi. NE Graham, 2 mi. W Nelson field, tested 1,000,000 cu. ft. gas from 4,288-95 ft., top Marble Falls 4,470 ft., S.D. 4,475 ft.
Dorian & Farrell 1 Grigsby, Sec. 416, T.E.&L. Sur., 7-in. 3,972 ft., show oil 3,979-89 ft., bailed 1½ gal. oil per hr., T.D. 4,991 ft., P.B. 3,989 ft., 40-qt. shot, made 3 bbl. oil in 1½ hr., testing.
C. D. Willis 1 Stewart D, 1,411 ft. from N and 1,057 ft. from W lines, David Dawson Sur., Abst. 76, 950-ft. test, S.D. 475 ft., repairs.
H. R. Loftin 1 Loftin, SW cor. 80-acre tract in Ann Wood Sur., Abst. 1274, 600-ft. test, S.D., weather, 290 ft.
Frank Buttram 1 Holmes, 600 ft. from W and 1,960 ft. from S lines, J. M. McRodgers Sur., Abst. 1878, 4,000-ft. test, 7-in. at 4,006 ft., show gas 4,006-11 ft., S.D., weather, 4,065 ft.
L. T. Burns 1 Larimore A, 500 ft. from N and W lines of E 200 acres of Sec. 150, T.E.&L. Sur., 5,200-ft. test, derrick.
Mason & Hibbs 1 Leverman, SW SW Sec. 271, T.E.&L. Sur., S.D., weather, 690 ft.

WEST CENTRAL TEXAS

FORT WORTH, Tex., Mar. 10.—Southern Jones County's Stith and Akard fields remained the center of attention for another week as testing continued at two prospective discoveries. Another previously indicated Jones County discovery well is being deepened, while in Fisher County a wildcat is testing a promising oil showing drilled early in the week.

Between the Stith and the Akard fields in Jones County Harry Hines and Brockover 1 A. M. Wimberly, Section 87, De Witt County School Lands Survey, was being prepared to receive an acid treatment of 2,000 gal. in lime from 2,215-40 ft. About a week ago the saturated section was drilled in the Cook horizon and it tested an estimated 25 bbl. daily, natural. The regular producing horizon in both the Stith field and in the Akard field is the Flippen sand, just below the Cook level.

In the Stith field proper, still a one-well field, the discovery operator, Danciger Oil & Refineries, Inc., is testing at 2 Kelso, north offset to the discovery well. The 2 Kelso last week indicated the opening of a new and slightly deeper producing horizon for the area when saturation was drilled in the Swastika lime zone from 2,666-80 ft. Casing was cemented at 2,665 ft., about 10 days ago and plug was drilled only this week end. No preliminary gages have yet been reported.

Only a few miles northwest of the Stith and Akard fields is another wildcat test which is deepening below 2,225 ft. after previously indicating the discovery of a new upper Hope sand field from 2,213-21 ft. Early estimates at the well placed its possible potential at about 100 bbl. daily, however, the flow declines in about 3 days to only 12 bbl. per day, pumping. It is Fain-McGaha 1 J. Moore, 1 mile south of the old Hawley field and in the T. Maltby Survey 252.

Fisher County.—Testing of a Fisher County wildcat early in the week revealed possibilities for that county's second oil discovery this year. The wildcat is Al Landers and H. J. Eisele 1 Mose Newman, Section 8, Block 20, T.&P. Survey, in the southern part of the county and about 14 miles northeast of Sweetwater. As the week closed operators were preparing to drill plug from casing set at 3,417 ft. on top of saturation drilled in the Fisher lime from 3,417-25 ft. A 30-minute drill-stem test prior to cementing casing showed 150 ft. of oil-cut mud with some gas.

In northeastern Fisher County and in the old Royston field, General Crude Oil 12 Flanigan, deep test in the old field, is drilling below 6,400 ft. after topping the Ellenburger lime at 6,100 ft. The test is carrying about 3,500 ft. of sulfur water in the hole. Location is in Section 200, B.B.B.&C. Survey.

WEST CENTRAL TEXAS COMPLETIONS

(24-hr. gages)

Brown County

Cross-Cut field: Viking Oil 1 Newton, dry at 710 ft.
Thrifty field: Mitcham Bros. 6-A Newton, dry at 1,350 ft.

Callahan County

Harris field: H. W. Lee 3 Harris, abandoned location.
Putnam field: Charles D. Robert 2 Norton, 1,792,910 cut. ft. gas, 549-52 ft.

Coleman County

Wildcat: States Oil 1 Webb, McClung Johnson Sur. 177, tested 8,150,000 cu. ft. gas daily from 1,566-76 ft., dry at T.D. 2,696 ft.
Novice field: States Oil 1 White, 6 bbl. daily, pumping, 50-qt. shot, 3,582-3,600 ft.

Shackelford County

Bluff Creek field: Hickok & Reynolds 3 Morris, 47 bbl. daily, pumping, 1,496-1,505 ft.
Albany field: Stanfield & Tubbs 2 Clark, 15 bbl. daily, pumping, 595-626 ft.
Wildcat: Roy Sherrock 1 Bernstein, S½ NW¼ Sec. 556, T.E.&L. Sur., dry at 472 ft.
Cecil Young 1 Simpson, NW cor. E½ Sec. 14, B.A.L. Sur., dry at 708 ft.

Stephens County

Wildcat: C. W. Hoffman 1 Castleman, Sec. 37, Blk. 7, T.&P. Sur., top Caddo lime 3,462 ft., dry at 3,768 ft.

Taylor County

Wildcat: J. T. Anderson 1 Stith, R. Turner Sur. 25, abandoned location.
View field: Tal Vez Oil 3 Richards, 146 bbl. daily, 1,000 gal. acid, 2,359-2,403 ft.

WEST CENTRAL TEXAS WILDCAT REPORT

Brown County

A. J. Stokes 1 B. S. Bayston, 210 ft. from SE line and 2,962 ft. from SW line of Prosper Mangel Sur. 604, drilling 1,680 ft.
R. Richmond 1 Petros, SW SW Sec. 7, H.T.&B. Sur., 1,200-ft. test, S.D. 800 ft.
Manning, Richburg & Johnson 3 Charter, SE NW Sec. 19, Blk. 2, B.B.B.&C. Sur., 600-ft. test, location.
J. O. Hart 1 Salle, 157-acre tract in Moses Little Sur., Sec. 10, 1,350-ft. test, drilling 550 ft.
Central Tex. Gas 1 E. S. Smith, NE cor. of W-199 acres of S-291 acres of Wm. Guyman Sur. 86., 2,000-ft. test, first report.
J. O. Hart & Son 1-C Pugh, 1,760 ft. from S and 150 ft. from E lines Sec. 40, Moses Little Sur., 1,350-ft. test, first report.
H. P. Evans 1 Starkey, SE SE Sec. 3, H. C. Walker Sur., 1,200-ft. test, first report.

Callahan County

W. D. Austin 1 I. N. Jackson, 150 ft. from N and W lines, Sec. 2, C.&M. Sur., show gas 832-42 ft., show oil 842-45 ft., H.F.W. 916 ft., S.D., weather, 916 ft.
Reeves & Sorrell 1 Young, 1,980 ft. from N and 660 ft. from E lines, Sec. 37, B.B.B.&C. Sur., H.F.W. 1,975-2,000 ft., 6⅝-in. 2,000 ft., S.D.
Ungren & Frazier 1 Rushing, SE SE SE Sec. 116, B.B. B.&C. Sur., 1,500-ft. test, location.

Coleman County

A. P. Heinze 1 J. Kincaid, 467 ft. from N and W lines of E½ SW Sec. 41, B.B.B.&C. Sur., 3,800-ft. test, 20-qt. shot 3,630-45 ft., T.D., show oil and water, S.D., weather, 3,645 ft.
L. J. Derrick 1 J. W. Vance, 330 ft. NW of old Texas 1 Vance, also in Sec. 101, E.R. Sur., 2,100-ft. test, location.
R. H. Murray 1 Morris, 467 ft. S and W of NE 160 acres of J. Greenwood Sur. 304, S.D. 1,305 ft., moving in soudder to start up.
Cooper Brothers 1 McClure, 1,100 ft. from S and 2,400 ft. from W lines of T. R. Frizzell Sur. 711, 2,800-ft. test, S.D. 260 ft., weather.

Comanche County

Campbell 1 Stark, SW part of Asa Hoxey Sur., S.D., 145 ft., repair, will set 6⅝-in.

Concho County

Floyd C. Dodson 1 Robert Wilson, Thomas Green Sur., 10 mi. SW Eden, show oil and gas 3,792-95 ft., 3,819-20 ft., at 3,828-29 ft. showed 1 bailer water per hour, T.D. 3,849 ft., S.D.

Eastland County

Hickok Oil 1 Luse & Gray, NE Sec. 486, S.P. Sur., Ordovician test, & mi. SE of new McElreath field, 4,250-ft. test, drilling 3,297 ft.
A. A. Hutton 1 W. Penn, NW SE Sec. 11, Blk. 2, B.B. B.&C. Sur., 600-ft. test, S.D. 400 ft.
Douglas Tomlinson, Jr., et al 1 Bennett, NE NE NE Sec. 6, Blk. 2, H.&T.C. Sur., 900-ft. test, show oil 890-96 ft., 350 ft. O.I.H. in 12 hr., testing.

Erath County

W. A. Young 1 J. B. Mills, J. Harvey Sur., 5 mi. NW of Dublin, T.D. 212 ft., S.D.

Fisher County

F. A. Stephenson 1 Mayberry, SE SW Sec. 56, Blk. 1, H.T.&B. Sur., 3,400-ft. test, cored 3,285-3,302 ft., recovered sand showing oil, top Swastika 3,277 ft., 40-gravity oil, deepened to 3,315 ft., 1,500 bbl. oil in storage, making est. 200 bbl. per day, T.D. 3,329 ft., P.B. 3,315 ft., testing.
General Crude Oil 12 Flanigan, center of old Royston field, top Ellenburger 6,094 ft., drilling 6,345 ft. and carrying 3,500 ft. sulfur water.
F. A. Stephenson 1 Humphries, NW NW Sec. 49, Blk. 1, H.T.&B. Sur., 2,350-ft. test, top lime 2,985 ft., dry lime 2,985-92 ft., T.D., waiting on spudder.
P. R. Long 1 W. F. Davidson, SE NW Sec. 59, Blk. 1, H.T.&B. Sur., 4,3001ft. test, S.D. 100 ft.
Landers & Eisele 1 Mose Newman, SE NW Sec. 8, Blk. 20, T.&P. Sur., 10-in. 301 ft., oil lime 3,416-34 ft., treated and tested only mud, prepare run pipe, T.D. 3,434 ft.
P. R. Long 1 Maberry, SE cor. A. A. Spring Sur., 2 mi. SW of McCaully, show oil 3,250-79 ft., waiting on spudder.

Hamilton County

A. J. Caldwell 1 W. W. Jones, 1,002 ft. from NE, 150 ft. from SE lines, W. H. Crowder Sur., correction, S.D. 2,999 ft.
Falls Ref. Co. (formerly Wallace & Vickers) 2 Lund, C S½ of 20 acres of N½ of SW¼ R. J. Bailey Sur. 51, top Ellenburger 3,853 ft., S.D. 3,953 ft.
Gunther & Smith 1 Thompson, 467 ft. from SE and 4,533 ft. from SW lines of Rhody Kennedy Sur., spudded and S.D.
Hensley & Watson 1 Manning, 467 ft. from W and 2,500 ft. from S lines of Apago Gaitham Sur., rotary on location.
Groover & Rose 1 Joe Fuqua, 1,600 ft. from W and 640 ft. from S lines of J. W. Bowers Sur., 3,000-ft. test, first report.

Jones County

H. Hines and W. D. Brookover 1 A. N. Wimberly, SW SW Subd. 91, De Witt C.S.L. Sur., 2,500-ft. test, saturation 2,215-33 ft., 7-in. 2,215 ft., est. 50 bbl. daily, S.D., weather, 2,233 ft.
Fain-McGaha Oil 1 Moore, 660 ft. from NE and 1,320 ft. from SE of S 107 acres of J. D. Maltby Sur. 252, 2,500-ft. test, saturation 2,215-21 ft., preparing to complete on pump, est. 25 bbl. oil per day, naturally, flow declined from 35 bbl. oil per day to 10 bbl. oil per day, pulling tubing to deepen.
Danciger Oil & Ref. 1 Jacob Foster, SE¼ W 100 acres, SW¼ Sec. 13, Blk. 13, T.&P. Sur., 3,000-ft. test, 15½-in. 133 ft., S.D., weather, 194 ft.
J. C. Hunter 2 Minter, N½ Lot 7, Sec. 192, Robert Smith Sur., 2,400-ft. test, 12-in. 61 ft., drilling 1,292 ft.
Fain-McGaha 1 Cooper, SE SE SW Sec. 29, Blk. 15, T.&P. Sur., 4,000-ft. test, 10-in. at 177 ft.
W. W. Fondren 1 C. P. Rogers, 126-acre tract in N½ Sec. 32, Blk. 18, T.&P. Sur., 3,100-ft. test, pits.
Groover & Rose and Jones & Stasney 1 Owens, SE SE Sec. 46, Blk. 15, T.&P. Sur., 2,000-ft. test, first report.

Menard County

W. F. Sorrell 1 Wilkerson, NW cor. Sec. 1549, C. A. Zimmerman Sur., Abst. 827, 4,000-ft. test, drilling 2,600 ft.

McCulloch County

W. J. Willard 1 E. B. Garrett, 467 ft. from N and E lines of Sur. 934, Abst. 1196, 3,000-ft. test, fishing 565 ft.
Clark 1 Lively, SE cor. Sec. 931, H.F. Hetzfeldt Sur., 650-ft. test, S.D. 820 ft.

Palo Pinto County

Wilcox O. & G. 1 Rogers, 467 ft. from E line, Sec. 894, T.E.&L. Sur., T.D. 3,300 ft., P.B. 1,505 ft., made 3 bailers water and 1½ bailers oil, S.I.
Georgian Oil 1 Weldon, A. J. Smith Sur., Abst. 383, H.F.W. 2,121 ft., T.D.
Elgin & Watson 1 Watson, NE NW Sec. 10, Blk. 2, T.&P. Sur., S.D. 4,065 ft.
Hickok Prod. and Reynolds 1 J. R. Halsell, 467 ft. from S and W lines, Sec. 92, B.B.B.&C. Sur., Abst. 105. 5,500-ft. test, show gas 1,545-65 ft., S.D., weather, 2,098 ft.
W. K. Gordon 1 Noland, NE SE Sec. 86, Blk. 3, T.&P. Sur., 3,500-ft. test, drilling 1,245 ft.

Shackelford County

R. H. Roark 1 Lee, 1,170 ft. from N and 2,790 ft. from E line, Sec. 37, Blk. 12, T.&P. Sur., 1,250-ft. test, drilling 1,152 ft.
B. & F. Cotton Warehouse 1 Snyder, NE SW NE Sec. 32, L.A.L. Sur., 800-ft. test, location.
J. F. Baker and M. E. Daniels 1 Davis, SE NW Sec. 3, Blk. 13, T.&P. Sur., 1,700-ft. test, location.
E. M. Doloach 1 Cook, SE SE NE Sec. 64, E.T. Sur., location.
Georgian Oil 2 Blach, 1,290 ft. from SE and 540 ft. from SW lines, Sec. 391, T.E.&L. Sur., spudded and S.D.
Grossenbacher & Hagerty 1 Elliott, SW SW Sec. 12, L.A.L. Sur., 8¼-in. 570 ft., S.D., weather, 832 ft.

Taylor County

Ce-Beth Oil 1 City of Abilene, south shore of Lake Abilene on city property, 4,000-ft. test, T.D. 2,480 ft., top lime 2,443 ft., show oil 2,453-78 ft., rigging up to drill deeper.

Pettus Sand Field Discovered; Two Major Extensions Made

By
F. L. SINGLETON

CORPUS CHRISTI, Tex., Mar. 10.—The opening of a new Pettus sand discovery in Bee County, favorable showing of two wildcats in Aransas and Refugio counties, and major extensions to the Kelsey and Rincon fields in Starr and Jim Hogg counties, marked up an interesting week of developments in the Southwest Texas district the past week.

SUMMARY OF COMPLETIONS

Lower Gulf Coast

	No.	Bbl.	Footage
Oil wells: Fields	11	876	55,927
Gas wells: Fields	2		11,924
Dry holes: Fields	2		12,798
Total	15		80,649

Laredo District

Oil wells: Fields	8	1,155	30,393
Gas wells: Fields	2		6,564
Dry holes: Fields	2		5,036
Wildcats	5		19,986
Total	17		61,989

San Antonio District

Oil wells: Fields	1	261	2,154
Dry holes: Fields	1		860
Wildcats	2		5,640
Total	4		8,654

The first Pettus sand discovery to be opened in Bee County in several months was opened 3 miles southwest of the town or Normanna as J. R. Dougherty 7 R. T. Hicks flowed 17 bbl. of 56-gravity oil on a 10-hour gage through a 5/32-in. choke. Tubing pressure was 1,000 lb., and shut-in casing pressure 1,150 lb. The well is bottomed at 4,178 ft., and casing was cemented following a drill-stem test at 4,140-78 ft. which recovered several hundred feet of pipe-line oil. Location is in the J. M. Uranga grant.

Refugio County Discovery

Another Frio sand discovery was indicated for Refugio County by the showing of Southern Minerals 1 R. H. Wood which is shut down for orders after a 15-minute drill-stem test at 5,900-08 ft., recovered 920 ft. of 37.9-gravity oil, and 160 ft. of salt water. The test was made through a ⅝-in. choke on top of a ¼-in. choke on bottom, and working pressure built up to 115 lb. Sand with a show of oil was cored at 5,904-08 ft. The well is situated in the Anastacio Reojas Survey, about 3 miles southeast of the Refugio townsite, and is on strike with the La Rosa and Refugio fields.

Humble 1-27 State, a marine operation located offshore from Aransas County in Aransas Bay, is showing promise of opening gas-distillate production as the well is flowing an unestimated amount of gas and distillate while testing through a 7/64-in. choke. Tubing pressure is 825 lb., and shut-in casing pressure 1,800 lb. This well was drilled to a total depth of 10,341 ft., and is testing through perforated casing at 7,840-50 ft.

The southwest sector of the Wilcox trend was again placed in the limelight with the blowout of E. M. Jones 3-B George West, located in the Nelson Owen Survey, about 4 miles southwest of the town of George West in Live Oak County. The well blew out while the crew was going in the hole to core from a total depth at 9,036 ft. Approximately 180 ft. of drill stem had been run when the well blew out, throwing the drill stem and rotary table through the derrick. The well caught fire shortly afterwards, but was brought under control when the hole bridged. Before the well was completely dead, it began to make a small amount of oil. Nine and five-eighths-inch protection casing was cemented at 6,787 ft., and at the close of the week, derrick was being rebuilt and drilling will be resumed within the next few days. At the present depth, the well is reported to be in the Carrizo formation, the upper member of the Wilcox series. Sand showing gas was cored at 8,917-22 ft., and 8,925-34 ft. This is the second Wilcox test to be drilled on the structure, and it is the second time that excessive gas pressure has prevented a good test of the Wilcox.

Weser Field

In the Weser field, Goliad County, W. R. Davis 2-C Albrecht, located in the T. Hancock Survey, is bottomed at 7,575 ft., and an electrical survey was being made. Oil production was recently established in this gas field from the Vicksburg formation at approximately 5,200 ft., and the present well is being drilled as an exploratory test to the Wilcox.

East of the Benavides field, Duval County, Hiawatha Oil & Gas Co. 30 George Parr, recovered 40 ft. of oil on a 15-minute drill-stem test in the Cockfield sand at 5,888-94 ft., while sand with an oil and gas odor was logged at 4,792-4,803 ft. This is the first operation for the field in several weeks, and the completion of the well for a producer would extend the limits of the field about ½ mile. Five miles southeast of the Adami field, George Proctor 2 Fredericks, J. H. Gibson Survey 344, is reported to have cemented casing for a production test, but details as to what showings have been logged were not available.

Development of the La Gloria field, Jim Wells County, was gaining momentum as the field was extended about 1½ miles northeast, and location for a well 2 miles south of the La Gloria townsite was announced.

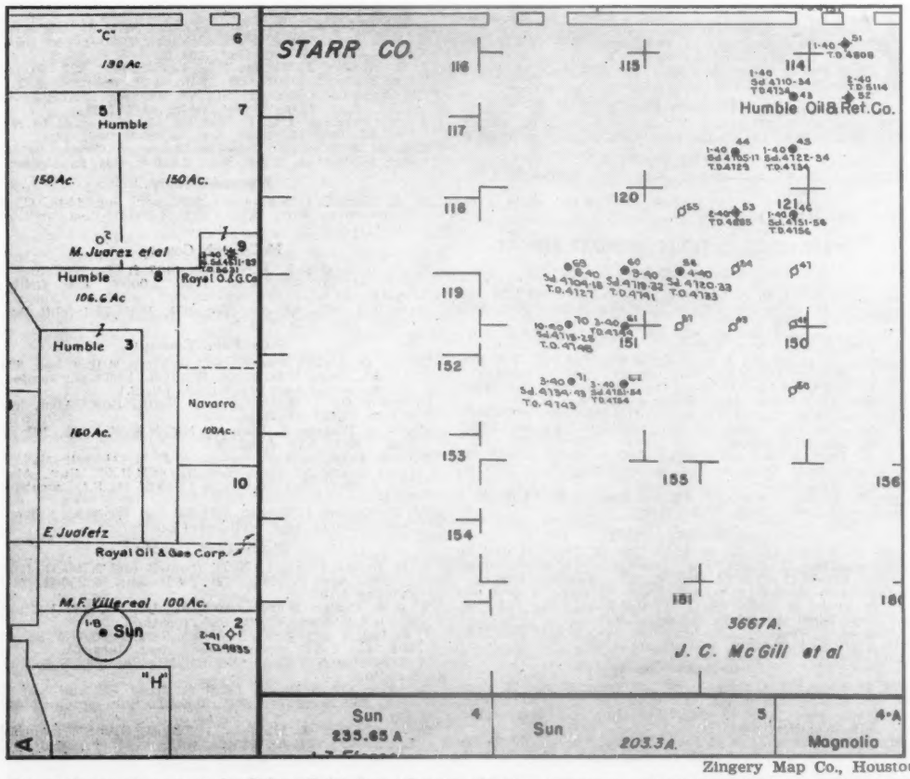
La Salle County Test Dry

William H. Spice 1 Reed, a Wilcox test in La Salle County, was marked off the list as a dry hole at a total depth of 5,715 ft. Several sands in the Wilcox were logged but all were dry. Preparations are being made by Barnsdall Oil Co. to drill 1 G. W. Sager, 2 miles west of Atlee Switch, a projected 5,500-ft. test which is being drilled on a large block that was originally assembled by Trinity Petroleum Co. Approximately 5 miles north of the Spice dry hole, Holland Oil Co. is moving in material for 1 M. Cartwright in Section 238, a 6,000-ft. test. Wildcatting along this sector has resulted from the recent discovery of the Washburn field in La Salle County by H. R. Cullen.

An expansion of drilling activity in the Kelsey and Rincon field, Jim Hogg and Starr counties, is anticipated following the completion of two important outpost wells as producers. In the Kelsey field, the producing limits of the Starr County side of the field were extended about 1 mile south with the completion of Sun 1-B Emilo Trevino, which flowed at the rate of 6 bbl. per hour while testing through a ½-in. choke. Tubing pressure was 480 lb., and casing pressure 790 lb. The well is bottomed at 4,764 ft., and is producing from sand topped at 4,745 ft.

The extension at Rincon was provided by Continental 1-D F. D. Davenport, 1½ miles south of production which was completed for an average producer through perforated casing at 4,000-20 ft. Location for 20 wells were staked by the company on acreage which was recently acquired on a working agreement with W. R. Davis, Inc. These locations were made on the A and B leases, while an east offset to the extension producer was announced. North of the field, Transwestern Oil Co. et al staked location for 1 W. I. Cameron in the G. W. Smith Survey 228 which places the well about ½ mile north of Transwestern 1 Cameron, recently abandoned after a series of tests were made.

(Continued on Page 89)



Zingery Map Co., Houston

Plat of the south part of the Kelsey field, Starr County, showing important extension marked up by Sun Oil Co. 1-B Trevino

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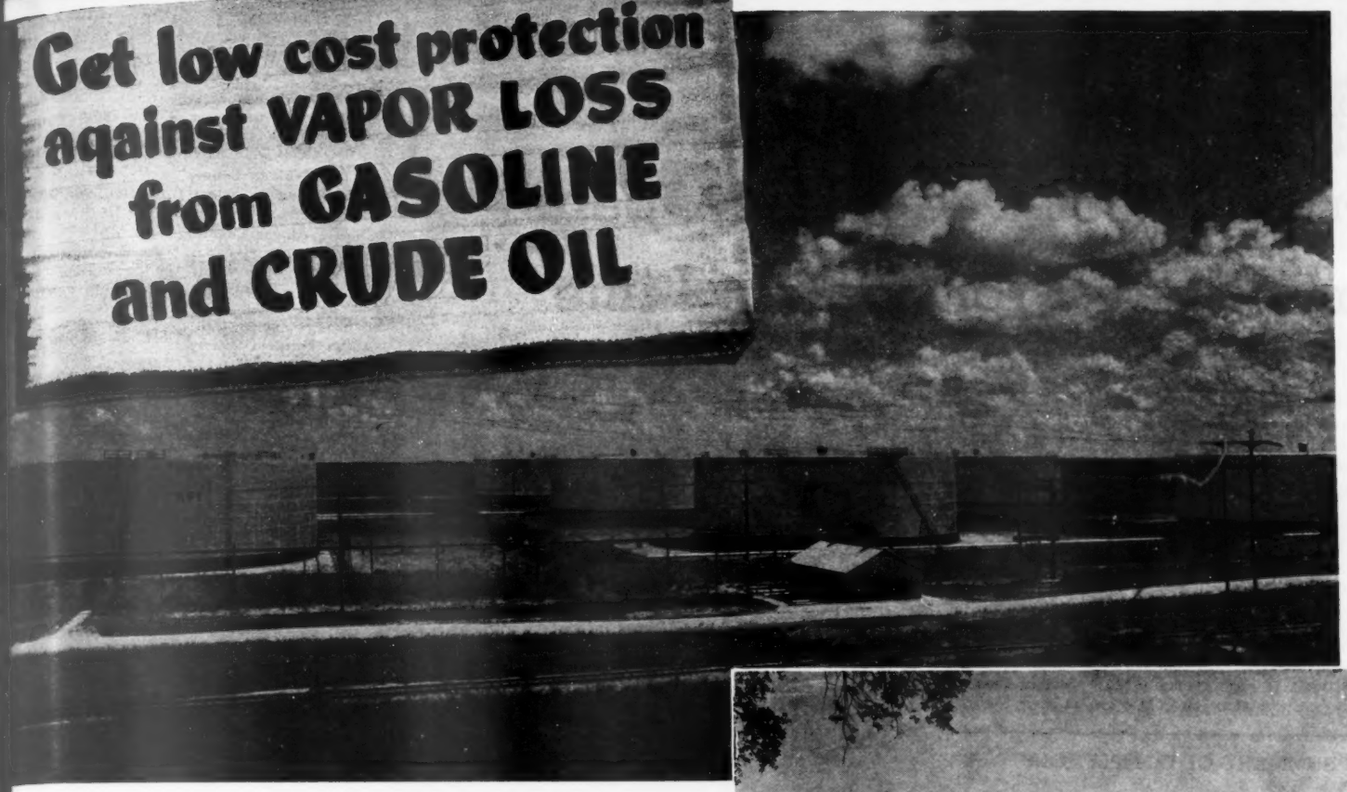

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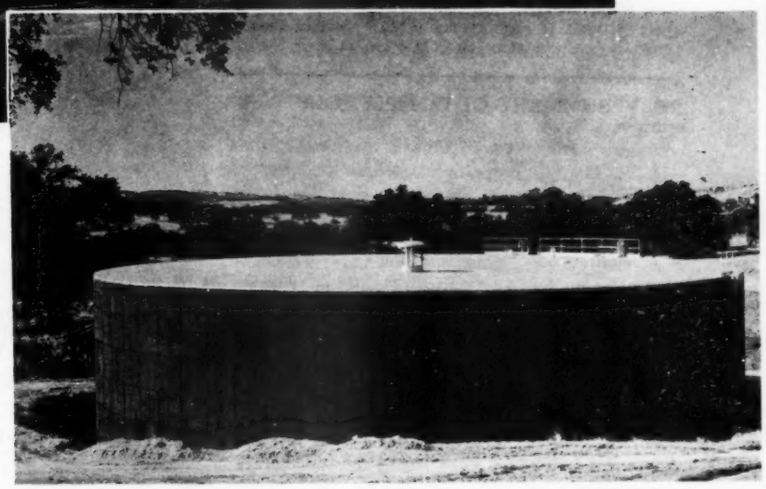

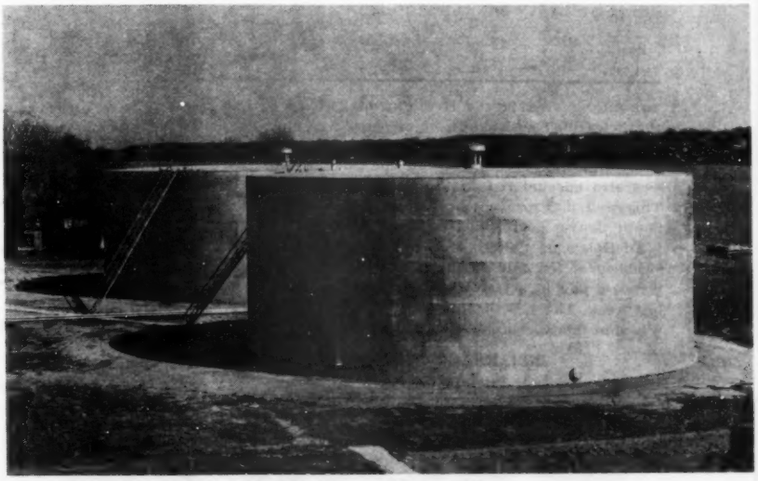

TOP: Group of gasoline tanks with Wiggins Breather Roofs at a Texas refinery. DIRECTLY ABOVE: New 115 ft. diameter Wiggins Breather Roof which has been installed on an existing crude oil storage tank, located in California. BELOW: Two Wiggins Breather Roofs installed on gasoline storage tanks at a Mississippi River terminal. These tanks have capacities of 80,000 and 58,220-bbls.

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CHICAGO.....2128 McCormick Building
DETROIT.....1514 Lafayette Building
CLEVELAND...2204 Builder's Exchange Bldg.
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PHILADELPHIA.1615-1700 Walnut St. Building
BOSTON.....1517 Consolidated Gas Building
SAN FRANCISCO.....1054 Rialto Building
LOS ANGELES.....1422 Wm. Fox Building

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Griffin Pool Deep Test Opens Small Pay From Salem Lime

By STAFF CORRESPONDENT

EVANSVILLE, Ind., Mar. 10.—The Salem lime proved somewhat disappointing as a deep-pay horizon in the Griffin field of Gibson County last week when Continental 28 Bozeman, Salem test in SW SW NE 23-3s-14w, pumped at the rate of 10 bbl. oil and 20 bbl. water a day. Although the lime was reported as having good saturation, a large well was not expected because of a low permeability. There were no indications of the production increasing with completion of the well and testing was still under way at the end of the week.

Ed Holemans 1 Mumford, Posey County wildcat, in SE NW NE 6-4s-13w, was completed for 407 bbl. early last week. The well was completed in the Biehl sand at 1,898-1,907 ft., after being plugged back from the McClosky at a total depth of 2,932 ft. A show of oil was encountered in the McClosky at 2,914-24 ft. and the hole filled with 40 ft. of oil. However, operators did not consider the McClosky saturation as comparable with that encountered in the Biehl. Saturation was also encountered in the Palestine at 1,700-20 ft. This well may prove to be an extension well of the South Griffin pool which is about 2 miles northwest.

Ed Holemans 1 Oeth, another Posey County wildcat, swabbed at the rate of 120 bbl. of fluid, 42 per cent water, a day in a test of the McClosky at 2,912-16 ft. last week. The 1 Oeth, located in NE SE NE 6-4s-13w, was shut down awaiting orders at the end of the week.

SUMMARY OF COMPLETIONS

Indiana

	No.	Bbl.	Footage
Oil wells	4	380	9,062
Gas wells	1	*0.2	535
Dry holes	3	.....	8,191
Total	8	.....	17,788

Ohio

	No.	Bbl.	Footage
Oil wells	5	160	7,737
Gas wells	20	*8.12	45,567
Dry holes	5	.....	15,351
Input wells	3	.....	1,462
Total	33	.....	70,117

Eastern Kentucky

	No.	Bbl.	Footage
Oil wells	3	35	2,630
Gas wells	2	*0.9	3,190
Total	5	.....	5,820

Western Kentucky

	No.	Bbl.	Footage
Oil wells	1	100	1,384
Dry holes	4	.....	7,650
Total	5	.....	9,034

*Million cu. ft.

INDIANA COMPLETIONS

Daviess County

Loogootee pool: Midwest Dev. 5 Nolen, NE SE SW 2-2n-5w, 200,000 cu. ft. gas, sand 511-32 ft., T.D. 535 ft.

Wildcat: Newton P. L. 1 Brittain, NE NE SW 15-1n-5w, dry, Trenton 3,212 ft., H.F.W., T.D. 3,252 ft

Gibson County

Griffin pool: Lewis Prod. 5 Dunn, NE NE NW 19-3s-13w, pumped 60 bbl. oil and 20 bbl. water, 20-qt. shot 2,083-94 ft., T.D. 2,094 ft.

Hall Edwards 15-A Maier, SE NW NW 13-3s-14w, pumped 75 bbl., 80-qt. shot 2,475-95 ft., T.D. 2,545 ft.

South Griffin pool: Continental 16 Keck, NE NW SW 27-3s-14w, pumped 215 bbl., 5,000 gal. acid 2,878-83 ft., 2,884-91 ft., T.D. 2,896 ft.

Wildcat: J. P. Shaw 1 Witherspoon, NE NW 20-1s-11w, dry, T.D. 1,986 ft.

Pike County

Bowman pool: Murphy Oil 9 Stewart, SW NW NW 26-1n-9w, pumped 30 bbl. in 12 hr., pumped off, sand 1,525-27 ft.

Posey County

Wildcat: H. G. Lewis et al 1 New Harmony Realty Co., NW NW NW 6-5s-13w, dry, Fredonia 2,900 ft., McClosky 2,932-34 ft., water, T.D. 2,953 ft.

INDIANA DRILLING REPORT

Crawford County

Reece-Dietz et al 1 Esarey ..... NE NW NE 36-3s-1w
Location.
J. C. Barnett 1 Baylor ..... SE SE SW 22-1s-2e
Devonian 1,150 ft., show oil, S.D. 1,155 ft.

Elkhart County

A. W. Downs 1 Harmon ..... NE NE SE 11-38n-4e
Traverse 614 ft., pay 649-50½ ft., pumped 100 bbl. in 12 hr., went to water, S.D. 650½ ft.

Gibson County

Petroleum Exploration Co. 1 Coolidge ..... SW SE 17-1s-11w
First report.
Hyslop et al 1 fee ..... NW NE NW 20-1s-9w
Ste. Genevieve 1,597 ft., show oil 1,641-46 ft., 1,661-66 ft., pumped 15 bbl., natural, T.D. 1,647 ft.

Greene County

Midwest et al 1 Good ..... W½ NE NW 21-6n-7w
Devonian test, rig.

Knox County

C. M. Lane et al 1 Morgan ..... SW SE SW 32-2n-9w
Spud.
Naomi Oil 1 Walden ..... NE NE NE 10-5n-10w
Spud.

Newton County

A. C. Thomas 1 Henekle ..... SE SE SE 36-30n-9w
S.D. 195 ft.

Orange County

United States Oil 1 G. E. Willyard ..... NW NE SW 33-1n-1w
S.D. 400 ft.

Posey County

Hollandsworth 1 Crumm ..... NW NW SW 5-4s-13w
Drilling 1,920 ft.
Holemans 1 Mumford ..... SE NW NE 6-4s-13w
Menard 1,960 ft., Glen Dean 2,259 ft., Ste. Genevieve 2,775 ft., show oil 2,914-24 ft., 40 ft. oil, natural, will acidize. T.D. 2,931 ft.
Holemans et al 1 Oeth ..... NE SE NE 6-4s-13w
T.D. 2,981 ft., 20-qt. shot 2,929-35 ft., 500 gal. acid, pumped 40 bbl. oil and 30 bbl. water.
McCummings et al 1 Ritter ..... SW SW SE 9-8s-14w
Base Pennsylvanian 1,490 ft., lower Kincaid 1,592 ft., Degonia 1,616 ft., Clore 1,646 ft., Menard 1,776 ft., Waltersburg sand 1,881 ft., Glen Dean 2,037 ft., drilling 2,150 ft.

Spencer County

J. B. Miller et al 1 Dooley ..... NW NE NW 19-7s-7w
Spud.

Sullivan County

Trio Drlg. 1 Eaton ..... NW NW 2-7n-9w
Set 10-in. 20 ft., 8-in. 105 ft., drilling 215 ft.
W. J. Reynolds 1 Poe ..... NE NE SW 3-8n-10w
T.D. 1,477 ft., 6,000 gal. acid 1,455-77 ft., water.

Vanderburg County

T. W. Drake 1 Nurrenbern ..... SE NE NE 6-7s-14w
Set 8-in. 391 ft., S.D. 440 ft.
Harvey Simms et al 1 Heil ..... NW NW SW 6-7s-11w
Waltersburg 1,717-38 ft., slight show oil, drilling 1,740 ft.

Vigo County

Sage & Farley 1 Campbell ..... S½ NE NW 24-11n-8w
H.F.W. 1,664-1,725 ft., drilling 1,725 ft.

OHIO

NEWARK, Ohio, Mar. 10.—Of the 33 wells completed, 20 were gas, 5 were oil, 5 were dry, and 3 were input wells. Muskingum County and Licking County yielded the only gassers gaging better than a million cubic feet. Newark field had four gas completions. Two deep tests in the area northeast of New Philadelphia, Tuscarawas County, found the Clinton horizon dry.

In Wayne County the Ohio Oil Co. 8 J. H. Armstrong, Wooster Township, is drilling ahead at 3,645 ft. after finding the Clinton at 3,427-42 ft. and 3,468-82 ft. with a little gas showing in the first streak and a show of oil at 3,481 ft.

Magnolia Petroleum Co. 1 Della Shrum, Smith Township, Mahoning County, is having difficulty with a crooked hole in the lime; top of lime was had at 2,838 ft., at last reports the operator was fishing for tools.

Another important deep-test location has been made by Ohio Oil Co. on the Cambridge arch, just west of the old Cambridge Oriskany gas field, Guernsey County, Adams Township, SE NW Section 16, the R. and J. Marshall tract, 2¼ miles northeast of New Concord.

OHIO COMPLETIONS

Ashland County

Jackson Township: Glen Harmon 1 L. D. Hall, Sec. 22, 720,000 cu. ft. gas, Clinton, T.D. 2,925 ft.

Athens County

Bedford Township: C. P. Bowman 2 Frank L. Jones, Sec. 24, at Pratts Fork, 20,000 cu. ft. gas, second Berea, T.D. 1,700 ft.

Carthage Township: Ohio Fuel Gas Co. 4 Kate Snodgrass, Sec. 31, 600,000 cu. ft. gas, Berea, T.D. 1,605 ft. (Old well drilled deeper, old T.D. 800 ft.)

Fairfield County

Berne Township: City Natural 1 J. Jackson, Sec. 10, 50,000 cu. ft. gas, Clinton, T.D. 2,129 ft.

Holmes County

Paint Township: Ohio Fuel 1 L. J. Yoder, Sec. 28, 310,000 cu. ft. gas, Clinton, shot, T.D. 4,153 ft.

Knox County

Union Township, Danville corporation: Upham Gas 1 M. T. Gaines, 800,000 cu. ft. gas, Clinton, T.D. 2,817 ft.

Ohio Fuel Gas Co. 1 Victoria Kaylor, NW Sec. 4, 720,000 cu. ft. gas, Clinton sand, T.D. 2,850 ft.

Upham Gas Co. 1 M. T. Gaines, Danville corporation limits, 800,000 cu. ft. gas, Clinton sand, T.D. 2,790 ft.

Allen Willey 1 George Hammond, 680,000 cu. ft. gas, Clinton, T.D. 2,761 ft.

Licking County

Newark Corporation: Dowler Oil Co. 1 B. D. Plyler, 520,000 cu. ft. gas, Clinton, shot, T.D. 2,366 ft.

Gail Early 1 Joseph Branhold, N. 480,000 cu. ft. gas, Clinton, T.D. 2,398 ft.

Mary Ann Township: Ohio Fuel 2 F. N. Wilkins, Sec. 16, 790,000 cu. ft. gas, Newburg, T.D. 2,156 ft.

Copperhead O. & G. Co. 2 H. O. Thompson, Sec. 9, 12 bbl., T.D. 603 ft.

Allen Willey et al 1 William Strickey, Sec. 25, 1,000,000 cu. ft. gas, Clinton sand, T.D. 2,590 ft.

Medina County

Chatham Township: R. C. Holmes et al 1-O Grover J. Rumbaugh, Tract 14, Lot 1, 5 bbl., Berea, T.D. 500 ft.

R. C. Holmes et al 5-O A. B. and Mary Hostettler, Tract 14, Lot 1, 5 bbl., Berea, T.D. 501 ft.

R. C. Holmes et al 1-W Hostettler, input, Berea, T.D. 498 ft.

R. C. Holmes et al 12-W Hostettler, input, Berea, T.D. 500 ft.

R. C. Holmes et al 13-W Hostettler, input, Berea, T.D. 464 ft.

Meigs County

Bedford Township: C. P. Bowman 2 Frank Jones, Sec. 24, 25,000 cu. ft. gas, second Berea, shot, T.D. 1,695 ft.

Lebanon Township: Roy Proffit et al 1 Raymond Fitch, Sec. 21, at Hazel, 80,000 cu. ft. gas, first Berea, T.D. 1,905 ft.

Rutland Township: Bowman & Denning 1 Ed Heath, Sec. 22, 40,000 cu. ft., gas, Freeport sand, T.D. 425 ft.

Muskingum County

Brush Creek Township: Gas Prod. 1 E. E. Bailey, Sec. 15, 1,050,000 cu. ft. gas, Clinton, T.D. 4,185 ft.

Noble County

Wayne Township: Yokery Valley 2 D. M. Long, Sec. 29, 180,000 cu. ft. gas, Berea, T.D. 1,603 ft.

Perry County

Clayton Township: Preston Oil 2 Virgil Williams, Sec. 9, 98 bbl., Clinton, shot, T.D. 3,368 ft. (correction).

Hopewell Township: Ohio Fuel 1 Hattie Cotterman, Sec. 33, 160,000 cu. ft. gas, Clinton, shot, T.D. 3,035 ft.

Thorn Township: Preston Oil 1 Peorge W. Winegardner, Sec. 27, 50 bbl., Clinton, shot, T.D. 2,765 ft.

Ohio Fuel 1 Faye Boring, Sec. 21, dry, Clinton, T.D. 2,785 ft.

Tuscarawas County

Dover Township: Columbia Carbon 1 Andrew Ervin, Sec. 21, dry, Clinton 4,595-4,680 ft., T.D. 4,790 ft.

Fairfield Township: J. A. Upham 1 Massillon Tuscarawas Coal Co., Sec. 13, 30,000 cu. ft. gas, plugged, Clinton 4,890-4,970 ft., T.D. 5,093 ft.

Vinton County

Eagle Township: Salladay 1 V. W. Thomas, Sec. 24, 140,000 cu. ft. gas, Berea, T.D. 479 ft.

Washington County

Dunham Township: Porter 1 S. E. Sawyer, Sec. 12, dry, Maxon, T.D. 1,435 ft.

Liberty Township: Kun Run Oil Co. 15 G. C. Hendershot, Sec. 22, dry, Keener, T.D. 1,248 ft.

EASTERN KENTUCKY OPERATIONS

ASHLAND, Ky., Mar. 10.—Oil and gas completions share the spotlight with a dry hole in a report of operations in eastern Kentucky this week. Three oil wells with a daily combined production of 45 bbl. of oil have been completed in Powell County and the report of a dry hole climaxes a deep operation in Elliott County.

Greenup County also commands a share of the limelight with W. L. Foreman et al bringing in a well which the operator believes will produce better than 5 bbl. of oil daily. Foreman compared the well, which is located on the Kendall tract at Oldtown, with a well he recently brought in on a tract about 1½ miles away. The first well was a 5-bbl. one and Mr. Foreman says this one will surpass that mark. It also has a good showing of gas after being shot in the Berea at a depth past the 700-ft. level.

(Continued on Page 80)

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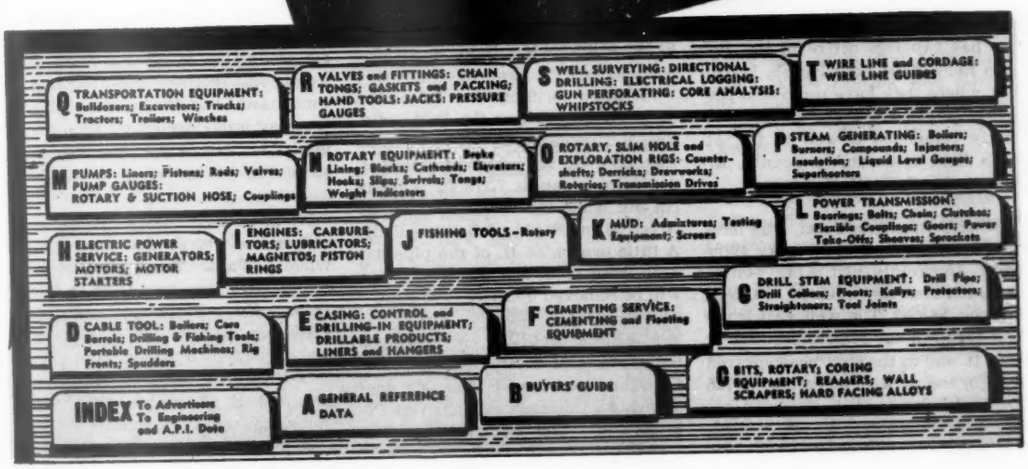
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Among the Drilling

LONGHORN Drilling Co. of Three Rivers, Tex., headed by Henderson Coquat, has been awarded contract for drilling Crown Central Petroleum Co. 1 O. J. Dolan, a Wilcox sand test 8 miles northwest of Tilden in McMullen County, Texas. Rig will be moved from the McMullen County operation to La Salle County, Texas, to drill a test for Sam Vanderwide and Wilcox Oil & Gas Co. east of Cotulla.

CRESCENT Drilling Co., Monroe, La., is drilling two deep Smackover lime wells for Atlantic Refining Co. in the McKamie field of Lafayette County, Arkansas, where oil production was discovered last week.

SAM VIERSON has set 500 ft. of 10¾-in. surface casing on Waggoner Brothers Oil Co. 1 Brander in Warren County, Mississippi, and is drilling toward contract depth of 7,000 ft. Location of the test is NW NW 17-14n-1e.

SULTANA Drilling Co., Shreveport, La., has two rigs active in the Joaquin field of De Soto Parish, Louisiana, where they have completed several large gas wells. The company recently completed a well in the Atlanta field of Columbia County, Arkansas, for G. Scott Hammond.

BERRY Brothers, Tulsa, who have been operating in Osage County, Oklahoma, apparently had a big well in the Buell area last week at 10 Osage, SW cor. 28-23-9. The well struck the first break in the Mississippi lime at 2,285 ft. and in the first head sprayed 70 ft. in the air with an estimated 125 bbl. in 4 hours.

MORRISON Drilling Co., Salem, Ill., recently deepened W. C. McBride 2 York, 34-5s-6e, in the Hoodville field of Hamilton County, Illinois, from the Benoist to the Aux Vases for combination production.

LUPHER Drilling Co. of Mount Pleasant, Mich., is moving equipment and personnel to Salem, Ill., where several deepening jobs with cable tools have been arranged.

BILL HINTON, Talco, Tex., has received contract to drill a wildcat test in the Pittsburg district of Camp County, Texas, for Capt. J. F. Lucey of Dallas, Tex. The operation is about 4,200 ft. west of the H. S. Moss 1 Venters discovery in that section and ¾ mile north of Ferndale Lake on the J. F. McKenzie 50 acres. Acreage was acquired on a farmout from Shell Oil Co., Inc., which retained an overriding interest but which is reported to have contributed $5,000 to the test.

HENDERSON COQUAT, Three Rivers, Tex., is preparing to move a rotary to La Salle County, Texas, for Holland Oil Co. 1 M. Cartwright, a 6,000-ft. Wilcox test located in the southeast corner of Section 238.

MILAM Drilling Co., San Antonio, Tex., has been awarded contract for drilling Forest Development Co. 1 Ramirez, a wildcat operation 2 miles west of the Colorado field in Jim Hogg County, Texas.

GEORGE ECHOLS, Houston, Tex., is preparing to make a production test of his 1 Broussard, a south outpost test in the South China field, Jefferson County, Texas. Casing was cemented on bottom at 7,918 ft. In the Double Gum area, Liberty County, Texas, his 2 Boyt is drilling below 8,700 ft. and looms as a dry hole as only slight showings were logged in the expected pay horizon.

PARKER Drilling Co., Tulsa, has an interesting job on the Gulf Refining Co. 1 Bateson, S½ SE SE 2-14n-4e, Bay County, Michigan. At present, drill pipe stuck at 7,776 ft. is being cut out while the well is making between 50 and 80 bbl. of distillate daily. A little over 4,500 ft. of the pipe has been recovered and the remainder will be removed by successive cuts.

ALLEN & MORRIS are moving a heavy rig from South Texas to North Louisiana to deepen the Herman Brown 1 Arkansas-Louisiana Gas Co. to 10,000 ft. The test, a Lincoln Parish wildcat, was formerly abandoned at 7,023 ft as the T. L. James 1 Spencer in 1937.

WORTH Drilling Co. will seek a deeper pay in 1-B Taylor, eastern-edge test in the Shugart area, Eddy County, New Mexico. A bailing test from a section carrying oil at 4,450 to 4,460 ft. developed 4½ bbl. of oil daily and a bailer of salt water each hour.

CABLE TOOL Drilling Co. is starting a well on the Colored school 2-acre tract in the Hawkins townsite, Wood County, Texas.

LOFFLAND BROTHERS, Tulsa, have contract to drill a wildcat test for J. Newton Rayzor of Houston, Tex., in Victoria County, Texas. The wildcat operation, 1 Evertson, is in the B. Simms Survey, 6 miles southwest of the distillate producer recently developed by John Mayo and W. Stewart Boyle in Jackson County, Texas, and is on the Coletto Creek-Cordele trend.

CARPER Drilling Co. 1-R Simon, in 30-17s-32e, Maljamar field, Lea County, New Mexico, has been completed for 500 bbl. daily through tubing after shooting with 240 qt. from 3,770 to 3,860 ft.

ROBEY-KEATING Drilling Co. has been issued an Oklahoma charter for a $60,000 firm. Incorporators are A. F. Keating, Salem, Ill., and L. R. McKinnon and Gerald B. Klein, both of Tulsa.

G. H. VAUGHN, Dallas, Tex., is the contractor on the Barnsdall Oil Co. 1 R. R. Cornelius, which has opened oil production in the McKamie gas-condensate field of Lafayette County, Arkansas. The well is producing from two perforated horizons, and tests will be made to determine where the oil production is coming from. McKamie was recently classified as gas-condensate, but the current discovery may prove deeper oil production in contact with a gas cap, and bring about reclassification as an oil field.

W. B. OMOHUNDRO, drilling contractor and independent operator of Wichita Falls, Tex., has received contracts for two new tests in North Texas. He will move in rig this week for the Benson & Benson 1 Seay, Owensby Survey, a projected 6,200-ft. test 5 miles southwest of Ringgold in Montague County. In the same county materials will be moved in soon for the Hults & Owen 1 Summers, the operators' second test in the area since its discovery by them last year. It is to be in Section 2861, T.E.&L. Survey, north offset to the discovery well.

BELMONT QUADRANGLE Drilling Corp., Bradford, Pa., has brought in one of the biggest gas wells of the Oriskany field in New York and Pennsylvania. The well, located on the George Lewis farm in West Union Township, Steuben County, New York, flowed at the rate of 14,300,000 cu. ft. a day.

BENNETT & DAVENPORT, Luling, Tex., contractors, have assumed obligation to complete a wildcat operation 5 miles east of the Salt Flat field in Caldwell County, Texas, for H. F. Wilcox Oil & Gas Co. The oper-

Contractors

ation was started several months ago but work ceased after surface casing was set at 126 ft. Contract calls for drilling to at least 3,500 ft. The operation is on the W. B. and N. Walker 150-acre tract in the William J. Smeed Survey.

BIG WEST Drilling Co., Dallas, Tex., is drilling two wildcats in North Louisiana, and has contracted a Joaquin field test in Shelby County, Texas, for the Texas Co. The two wildcats which the company is drilling for itself are located in La Salle and Lincoln parishes.

HENSHAW BROTHERS, San Antonio, Tex., received contract from Barnsdall Oil Co. for a 5,500-ft. Wilcox test to be drilled in La Salle County, Texas, about 2½ miles west of Atlee switch. The well is 1 G. W. Sager in Survey 903.

JACK FRAZIER, Houston, Tex., is moving a rotary to the Cedar Bayou area, Chambers County, Texas Gulf Coast, for Dick Schwab 1 R. C. Fisher, a 7,500-ft. test located in the John Steel Survey, about midway between the town of Goose Creek and the Cotton Lake field.

F. W. MARTIN & Co., Tulsa, was awarded a judgment of $79,541.69 against A. G. Glassell et al of Shreveport, La., in a federal court decision at Tyler, Tex., last week. The suit developed from alleged refusal of defendants to pay the drilling costs on a wildcat gasser that blew out and cratered. The operation was in Panola County, Texas. Defendants will appeal.

FRANKLIN & TIDEMAN, Houston, Tex., are moving a rotary to Burleson County, Texas, for Haven Oil Co. et al 1 Lewis, a wildcat located northwest of the Clay Creek field in the A. R. Gill Survey.

HARRY HARPER, who was contractor for the discovery well in Nebraska, the Pawnee Royalty Co. 1 Boice, is rigging up cable tools to drill a wildcat 4 miles southeast of Bedford, Iowa. The test, Pryor & Lockhart 1 Marr estate, is located in Taylor County in NE SW 32-68n-35w.

C. & I. Drilling Co., Houston, Tex., is rigging up in the old Pine Prairie prospect, Evangeline Parish, Louisiana Gulf Coast, for its 1 Evangeline Land & Mineral Co., a projected deep Wilcox test located in 37-3s-1w. This is the first well to be drilled in this area in a number of years, and the progress of the well will be watched with wide interest.

BRYANT & JOHNSON, contracting firm in Southeast New Mexico, is preparing to set 8-in. casing at a new gas discovery in western Eddy County, New Mexico. The well is being drilled for W. A. Suddreth et al as 1 Neil H. Wills, 6 miles west of the Getty field and 1,980 ft. from the south and east lines of 13-20-28. The 1 Wills has been correlated 90 ft. high, structurally, on top of the lime. It topped the gas zone at 757 ft. after topping the Yates sand at 695 ft., however, the large gas volume was encountered from 778-83 ft., total depth. The well was last reported making 7,000,000 cu. ft. daily. The well is to be carried deeper to the expected oil zone at about 1,000 ft.

HUDSON-HESS Drilling Co., Mount Vernon, Ill., is drilling below 3,005 ft. at the Paul A. Diggs, trustee, 1 Loomis Hardesty in the W½ NE SW 20-7s-5e, Saline County, Illinois. With an elevation of 431 ft., the test topped the Kincaid at 1,894 ft., Palestine at 2,170 ft., the Glen Dean at 2,551 ft. and the Benoist at 3,005 ft.

DELTA Drilling Co. 1 Walton, an extension on the north flank of the gas-distillate structure, appears to be one of the best Paluxy producers completed in the Chapel Hill field, Smith County, Texas. Pressure on casing was 50 lb. and 1,700 lb. on tubing while flowing into burning pits. Production is through 160 perforations in casing from 5,780 to 5,820 ft.

S. C. HERRING, contractor of Abilene, Tex., is still attempting to complete as a new discovery well a test being drilled for Harry Hines and W. D. Brookover at 1 A. M. Wimberly, between the Stith and Akard fields in southern Jones County, West Central Texas. An acid treatment of 2,000 gal. is scheduled for the Cook level pay section from 2,215-40 ft. It has swabbed at the rate of 25 bbl. daily, natural. Location is in Section 87, De Witt County School Lands Survey.

DRILLING & EXPLORATION Co. of Dallas, Tex., and Los Angeles, Calif., has obtained farmouts from Shell Oil Co., Inc., and Humble Oil & Refining Co. in the Wasson field of southern Yoakum County, Texas. Drilling & Exploration assumed a development obligation on the acreage which totals more than 2,300 acres.

HARRY SCHWARZ, of St. Louis, Mo., has been awarded contract for drilling the Algona Oil Co. 1 Marshall, a Trenton lime test in the Centralia pool of Illinois. Location is 200 ft. from the south line and 221 ft. from the east line in SW 12-1n-1w, Clinton County.

Robert (Bud) O'Donovan, Jack Kemper and Hi Lehmer of Union Oil Co. at work on a well in the Rio Bravo field of Kern County, California. The crew aided in setting a drilling record for the field recently when Union drilled and completed 36-34 Kern County Land at 11,444 ft. in 34½ days total elapsed time

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ROBERT INGRAM

Kraft Pool Is Extended Again; Stafford Co. Gets New Pool

IN spite of a steady 23-hour snowfall which blanketed much of Kansas last week, and the deep mud which followed with warm winds, field operations held up well and several semiwildcats were successful in extending field limits. The field extensions continued the trend of the past few years for pools along the Barton arch to expand and join into a few large producing areas.

The fast-growing Kraft pool of northern Barton County appeared to have another extension this week, this time ¾ mile to the west as a result of a good show of oil in Magnolia Petroleum Co. 1 Grosshardt, N½ SE SW 9-17-11w. The well topped the Arbuckle dolomite at 3,286 ft. and penetrated it 2 ft. Oil rose 340 ft. in 4 hours, and when it was deepened to 3,299 ft., the oil fillup increased to 2,000 ft. after 8 hours. Previously, 7-in. casing had been set at 3,287 ft.

At last report, the well swabbed 15 bbl. of oil an hour in preliminary tests and operators were preparing for a potential test and official completion. The Kraft pool at the end of February, according to the monthly proration schedule of the state Corporation Commission, had 55 oil wells with a combined daily potential of 87,711 bbl. for 12 operators producing from the Arbuckle dolomite.

SUMMARY OF COMPLETIONS

	No.	Bbl.	Footage
Oil wells: Bemis-Shutts	1	61	3,203
Bornholdt	1	35	3,330
Burnett	2	6.000	6,709
Geneseo	3	6,391	9,608
Hall-Gurney	1	3,000	3,174
Silica	1	3,000	3,251
Stoltenberg	1	400	3,288
Other fields	15	5,324	48,248
Wildcats	1	90	3,378
Gas wells: Hugoton	3	*42.5	6,189
Dry holes: Wildcats	2	.....	6,250
Total	31	.....	96,627

*Million cu. ft.

Nebraska

	No.	Bbl.	Footage
Oil wells: Falls City	1	36	2,277
Dry holes	1	.....	2,400
Total	2	.....	4,677

Russell County Pool Opened

In southern Russell County, Palmer Oil et al 1 Neidenthal, S½ SW SE 23-14-15w, showed for new production which will probably join the Neidenthal and Big Creek pools. Production was found in the Gorham sand at 3,169 ft. Operators set pipe 1 ft. in the sand, and after the plug was drilled, oil rose 1,800 ft. in 2 hours.

The new well is ¾ mile southwest of the Neidenthal pool, and the same distance northwest of Big Creek. W. J. Sherman, who holds an interest in the 1 Neidenthal, owns the southwest offset, and other offset tracts are held by Phillips Petroleum Co. and the Texas Co.

Meantime, the Silica pool of western Rice County was assured an extension 1 mile northwest after Sharon Drilling Co. et al swabbed 10 bbl. of oil an hour from 1 Nevius, SW SW NE 21-19-10w. Casing had been set at 3,274 ft. to test saturation in the Arbuckle, topped at 3,273½ ft.

And in Stafford County, Alf M. Landon et al had more encouraging results than a week ago with 1 Shaffer, W½ NW SW 3-21-13w. After reacidizing the well and pulling tubing, operators found the hole had filled 2,500 ft. with oil and the well continued to head 30-gravity oil and gas on swab pulls. If the well is successfully completed for a producer, it will open a new pool 3 miles northwest of the Hiss pool.

The present oil show is from Arbuckle dolomite penetrated to a total depth of 3,552 ft.

KANSAS COMPLETIONS

Barton County

Prusa pool: Armer & Vernon 1 Ney, S½ SW NE 17-16-11w, 164 bbl., Lansing-Kansas City, T.D. 3,212 ft.
Silica pool: Magnolia 21 Roetzel, E½ NE NE 24-20-11w, 3,000 bbl., Arbuckle, T.D. 3,251 ft.
Susank pool: Cities Service 3 Wittig, SW SW NW 16-16-13w, 138 bbl., acid, Arbuckle, T.D. 3,402 ft.

Cowley County

Wildcat (Gibson pool): Sinclair Prairie 1 Gibson, SE SE NW 29-34-3e, pumped 30 bbl. in 8 hr., potential 90 bbl., T.D. 3,378 ft., Bartlesville.

Ellis County

Bemis-Shutts: Gulf 2 Cress, W½ SE SE 12-11-7w, 61 bbl., Arbuckle, T.D. 3,203½ ft.
Burnett pool: Dickey 5 Kollman, W½ SE NE 18-11-17w, 3,000 bbl., Arbuckle, T.D. 3,345 ft.
Phillips 7 Sites, N½ SW SW 12-11-18w, 3,000 bbl., Arbuckle 3,364 ft.

Ellsworth County

Bloomer pool: Transwestern 2 Daugherty, W½ SW NE 32-17-10w, 84 bbl., conglomerate, T.D. 3,281 ft.
Edwards pool: Continental 6 Buehler, NE NE NE 28-17-8w, 3,000 bbl., Arbuckle, T.D. 3,216 ft.
Stoltenberg pool: Texas 4 Schroeder, S½ SE SW 27-16-10w, 400 bbl., Arbuckle, acid, T.D. 3,288 ft.
Wilkins pool: Hollow 2 Janssen, N½ SW SE 18-17-9w, 147 bbl., Arbuckle, T.D. 3,253 ft.
Derby 1 F. Peterman, S½ SE SE 11-17-10w, 36 bbl., Arbuckle, T.D. 3,285 ft.

Greenwood County

Wildcat: Ward McGinnis 1 Sharp, SW SW 9-28-12e, dry, T.D. 1,990 ft. at 990-1,000 ft., 100,000 cu. ft. gas.

Harvey County

Burrton pool: Hall-Jordan 1 Hurtey, W½ NW NW 19-23-3w, 48 bbl., Mississippian chat, T.D. 3,361 ft.

Marion County

Lost Springs pool: Ring-Mac 1 Novack, NE NE NE 32-17-4e, 497 bbl., chat, T.D. 2,410 ft.
Harwood 7 Novak, SE SE SW 28-17-4e, 164 bbl., chat, T.D. 2,439 ft.

Pratt County

Wildcat: Stanolind 1 Hartsell, E½ NW NE 3-26-12w, dry, T.D. 4,260 ft., at 4,242 ft. some oil.

Rice County

Bornholdt pool: Crosbie 2 Wright, N½ NE SE 13-20-6w, 35 bbl., Mississippian chat, T.D. 3,330 ft.
North Chase pool: McPherson 2 Campbell, NW SE SE 8-19-9w, 48 bbl., Arbuckle, T.D. 3,243 ft.
Chase pool: Shell 2 Reese, NW NE NE 22-19-9w, 328 bbl., Arbuckle, T.D. 3,251 ft.
Geneseo pool: Continental 5 Poland, SE NW SE 20-18-7w, 391 bbl., Arbuckle, acid, T.D. 3,175 ft.
Continental 2-A Warner, SW NE NW 30-18-8w, 3,000 bbl., Arbuckle, acid, T.D. 3,221 ft.
Continental 7 Ainsworth, NE SW NE 25-18-8w, 3,000 bbl., Arbuckle, T.D. 3,212 ft.
Raymond pool: Stormfeltz & Hyde 1 Graham, NE SW 16-20-10w, 380 bbl., Lansing-Kansas City, T.D. 3,138 ft.

Russell County

Big Creek pool: Gulf 1 Rusch, SE SE 29-14-14w, 104 bbl., Arbuckle, T.D. 3,202 ft.
Hall-Gurney pool: Cities Service 11-A Strecker, E½ SE NE 35-14-14w, 3,000 bbl., Gorham sand, T.D. 3,174 ft.

Stafford County

Jordan pool: Cities Service 2 Steinmenz, N½ NW SE 15-25-14w, 114 bbl., Lansing-Kansas City, T.D. 3,802 ft.
Zenith pool: Republic Natural Gas 5 McNickle, SE SE NE 2-24-11w, 72 bbl., Misener, T.D. 3,753 ft.

Stevens-Seward Counties

Hugoton gas field: Northern Natural 2 Brown, SW SW 20-25-34w, 27,312,000 cu. ft. gas.
Northern Natural 1 Boles, NE SW SE 26-32-35w, 9,779,000 cu. ft. gas.
Stevens County Oil & Gas 1 Smith, S½ SE 25-31-39w, 5,500,000 cu. ft. gas.

KANSAS DRILLING REPORT

Barton County

Isern 1 Lillard ..... W½ SW SE 6-16-11w
T.D. 3,278 ft., P.B. 3,268 ft., acid, swabbed 5 gal. oil and some water per hour, cleaned out to 3,276½ ft., acid, all water.
Republic Natural Gas 1 Radenberg ..... W½ NW SE 8-17-11w
Topeka 2,700 ft., Lansing 3,064 ft., Sooy 3,311 ft., Arbuckle 3,318 ft., cored 3,321-26 ft., some show oil, cored good saturation 3,326-32 ft., run casing.

Cowley County

Aladdin 1 Westerfield ..... NE SW NW 3-32-8e
First report.

Ellis County

Crow Drlg. et al 1 Miller... S½ SW SW 17-13-17w
Anhydrite 1,380 ft., T.D. 1,390 ft.

Ellsworth County

Pryor & Lockhart 1 Weisenthal ..SW SE NE 30-15-10w
7-in. 3,165 ft., S.D. 3,195 ft.

Marion County

Rex & Morris 1 Kappan ..... N½ NW NE 16-18-4e
10-in. 1,412 ft., drilling 1,855 ft.

Rice County

Earl Wakefield 1 Smyres ..... N½ NE SE 35-19-6w
Topeka 2,230 ft., Lansing 2,734 ft., drilling 2,951 ft.

Rooks County

Ruso 1 Dick ..... W½ N WSW 21-10-19w
Anhydrite 1,565 ft., drilling 2,390 ft.

Thomas County

Alva Billings et al 1 Ryan ..... E½ NE SE 27-8s-32w
Topeka 3,955 ft., drilling 3,967 ft.

Woodson County

Phillips 1 Fidelity ..... SW NW NE 4-26-15e
First report.

AVERAGE DAILY PRODUCTION

LEADING KANSAS FIELDS

	Mar. 8	Mar. 1
Augusta	1,150	1,200
Bemis-Shutts	10,250	10,700
Bloomer	4,500	4,700
Burnett	5,950	6,350
Burrton	7,450	7,900
Chase	4,550	5,000
Elbing	1,000	1,200
El Dorado-Towanda	6,950	7,200
Geneseo	4,000	4,100
Graber	2,150	2,650
Greenwood County	8,450	8,600
Hollow-Nikkel	1,400	1,500
Keesling	750	950
Lerado	1,000	600
Lorraine	1,250	1,250
Oxford	650	700
Rainbow Bend	850	950
Raymond	650	1,250
Ritz-Canton	3,750	4,000
Trapp	13,700	17,000
Balance Russell County	20,300	19,700
Sedgwick County	3,150	3,250
Voshell	1,650	1,750
Silica	15,950	16,750
Wellington	1,050	1,100
Wherry	2,800	3,300
Zenith	6,850	7,200
Others	59,400	61,700
Total	191,550	202,550

FOREST CITY BASIN

ST. JOSEPH, Mo., Mar. 10.—The Ohio Oil Co.'s newest producer in the Falls City pool—1 Bahr in SE SW SE 7-1n-16e—flowed at the rate of 36 bbl. per day following treatment with 200 gal. of butane and 500 gal. of acid. This well is a north offset to the Pioneer Drilling Co. 1 Boice and well on the north end of the structure. Hunton was topped at 2,277 ft. Ohio 2 Boice in SE NE 18-1n-16e, south offset to the discovery well of the pool, ran 43 ft. low, topping Hunton at 2,314 ft., but fairly good saturation was found and a test was ordered in the hope that production would be possible.

It was announced during the week that the Independent Pipe Line Co. was buying the Bell Oil & Gas Co. gathering system and other properties in the Falls City field, effective April 1. Under the deal the Black Gold Operating Co. will be a stockholder. The Black Gold Co. is backed by executives of the Sonken-Galamba Corp. of Tulsa and Kansas City, which firm bought the Bell concern first and then transferred it to the Independent. Falls City and Omaha capital originally backed the Independent.

Little else is happening at this time in the Falls City pool. In the Shubert area, about 10 miles north, also in Richardson County, there is a renewal of activity, but Nebraska is not expected to be really busy again until better weather prevails. Various operations are planned by the major companies in the county and numerous wildcat operations are expected.

FOREST CITY BASIN COMPLETIONS

NEBRASKA

Richardson County

Ohio 1 Bahr, ... SE SW SE 7-1n-16e
36 bbl., acid, Hunton 2,277 ft.

Nemaha County

Bow & Arrow Co. 1 Schriefer. CNL NE SW 20-5n-14e
Dry, Hunton lime 2,400 ft., T.D. 2,418 ft.

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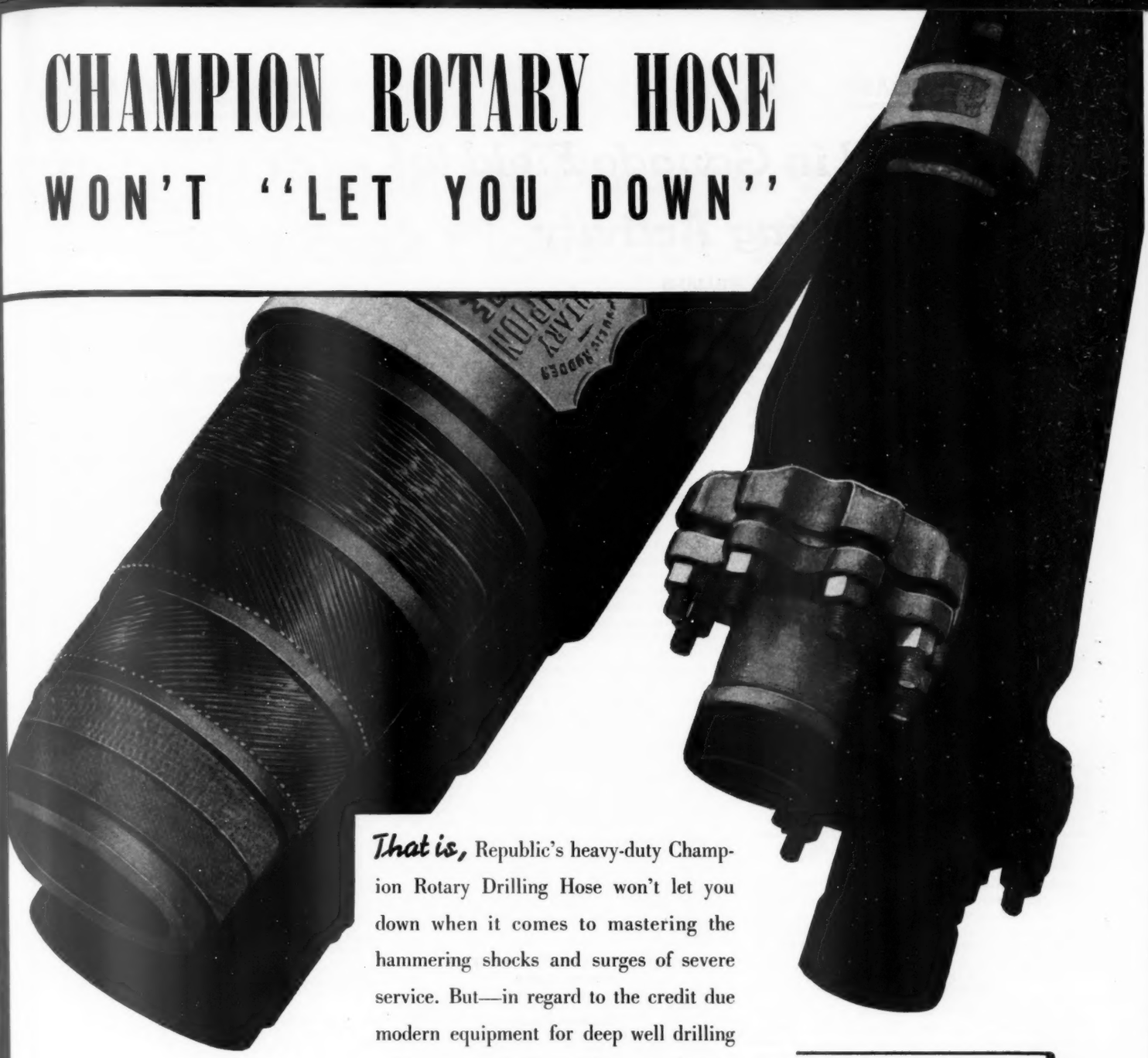

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New Sand in Ganado Field to Revive Drilling Activity

By NEIL WILLIAMS

HOUSTON, Tex., Mar. 10.—A revival of drilling activity in the Ganado field, Jackson County, is anticipated following the completion of Texas 1 Silliman which opened important production from a new sand in the basal Frio formation. Drilled to a total depth of 7,632 ft., the well was completed through perforated casing at 6,468-82 ft. for an initial production of 355 bbl. per day flowing through a 7/64-in. choke. Tubing pressure was 1,620 lb. Gravity of the oil was 35.1. The new discovery is located about 1,000 ft. west of the company's 3 Mortgage Land & Investment Co. which was completed in the discovery pay at 5,000-5,100-ft. pay. Approximately six wells have been completed in the discovery sand, but production has been small and the majority of the wells were completed with very high gas-oil ratios. As a result of this new discovery, preparations are being made to deepen several of these wells to the new horizon.

In the same county, and located about 1,500 ft. northeast of the discovery well of the new La Ward field, Humble 2-B Mauritz is bottomed at 5,228 ft., and 5½-in. casing was cemented for completion at 5,219 ft. Sand and shale showing oil and gas was cored in the discovery pay at intervals from 5,110-5,228 ft. Locations for two important south outpost wells were reported the previous week.

SUMMARY OF COMPLETIONS

	No.	Bbl.	Footage
Oil wells: Fields	13	3,141	90,357
Gas wells: Fields	1	.....	8,431
Dry holes: Fields	3	.....	14,443
Total	17	.....	113,231

Pure 1 Havran, the discovery well of a new deep sand in the West Ganado field, Jackson County, flowed 4 bbl. of distillate per day through a 10/64-in. choke from perforated casing at 5,995-6,005 ft. This well topped the Heterostegina at 4,640 ft., Frio 4,720 ft., and the Vicksburg at 6,600 ft.

New Vienna Field

M. McMurray 1 Allen, the discovery well of the new Vienna field, a Wilcox discovery in La Vaca County, is flowing at the rate of 3 bbl. of distillate per hour through a ¼-in. choke. Tubing pressure was 1,250 lb. and shut-in casing pressure 2,950 lb. A potential test was scheduled to be made the first of the week. The well was drilled to a total depth of 8,523 ft., and was plugged back and completed through perforated casing at 8,468-71 ft. The above test was made after a 5/32-in. bottom-hole choke was installed at 4,000 ft.

Superior Oil Co. of California 1 McWhorter, the discovery well of the Lake Creek area (Magnolia), Montgomery County, flowed 170 bbl. of 62.5-gravity distillate per day on a 24-hour potential test flowing through a 17/64-in. choke. Tubing pressure was 900 lb. and the gas volume tested 1,380,000 cu. ft. per day. Total depth of the well is 9,314 ft. and production is from perforated casing at 9,212-17 ft. Preparations are being made to start another well in the area but location has not been announced.

In the same county, and located in the Willis area, O. C. Garvey 1 Charles Horne has been shut down for several days at 7,069 ft. and the well is expected to be carried deeper. No shows of oil or gas have been reported in the Wilcox formation.

George Echols 2 E. W. Boyt, a wildcat located in the Double Gum area, Liberty County, is coring in shale below 8,600 ft. and the well looms as a dry hole. The round Marginulina was topped at 6,601 ft. and the flat Marginulina at 6,662 ft. Two feet of fine sand with an oil and gas odor was recovered in a core at 8,608-18 ft., but additional cores failed to log additional showings. The well is in the H.&T.C. Survey No. 9, about 2,110 ft. east of the operator's 1 Boyt, a dry hole which was drilled last year.

Southwest of the Silsbee field, Hardin County, Republic Production 1 Elliott topped the Textularia Warreni at 5,284 ft., Uvigerina at 5,723 ft., and the Hockleyensis at 5,937 ft. Drilling continues below 6,250 ft. with no shows of oil or gas reported. Location is in the Burrell Survey.

Wildcatting Gains Momentum

Wildcatting along the district continues to gain momentum as location for two more important tests were announced. In the Cedar Bayou area, Dick Schwab is moving in material for 1 R. C. Fisher located 467 ft. from the west line and 375 ft. from the south line of an 85-acre tract in the John Steel Survey. The location is approximately midway between the Cotton Lake and Goose Creek fields, and about 2½ miles south of the Cedar Bayou townsite. Several major companies holding protection acreage in the area are reported to be supporting the well. Contract depth is 7,500 ft.

Location for a projected 10,000-ft. test was announced for the Pearland area, Brazoria County, by West Production Co. and Humble Oil & Refining Co. The well is 1 A. C. Bell located 467 ft. from the south line and 308.8 ft. from the east and west lines of a 51-acre tract in the H.T.&B. Survey No. 3. The location is about 2 miles north of Pearland, and south of the Mykawa field in Harris County.

On the north side of the League City field, Galveston County, Phillips Petroleum Co. is apparently opening a new deep sand for the field as 1 Herrick is reported to have made 23 bbl. of 40.8-gravity oil in 14 hours while testing through perforated casing at 10,625-55 ft. This well which is the deepest test ever drilled in the field is bottomed at 11,015 ft. and an electrical survey is reported to have logged several other sands which will probably be tested before final completion is made.

TEXAS GULF COAST COMPLETIONS

Brazoria County

Old Ocean field: Stanolind 1 Schantz, 445 bbl., ¼-in. choke, perf. casing 10,128-45 ft., T.D. 10,933 ft.

Chambers County

Seabreeze field: Sun 1 Boyles, 167 bbl., ⅛-in. choke, perf. casing 8,412-22 ft., T.D. 8,486 ft.

Harris County

Tomball field: Humble 21 Reid, 96 bbl., ¼-in. choke, top sand 5,534 ft., T.D. 5,557 ft.
Humble 4 Theis, dry, T.D. 5,604 ft.

Jackson County

Ganado field: Texas 1 Kountz, 355 bbl., 7/64-in. choke, perf. casing 6,468-82 ft., T.D. 7,632 ft.
Lolita field: Humble 1 Mitchell, 384 bbl., ¼-in. choke, sand 5,275-86 ft., T.D.
West Ganado field: Pure 1 Havran, 4 bbl. distillate, 10/64-in. choke, perf. casing 5,995-6,005 ft., T.D. 6,621 ft.
West Ranch field: Magnolia 6 Magnolia-Bennett, 44 bbl. oil plus 10 per cent salt water, T.D. 5,769 ft.

Jefferson County

Fannett field: Gulf 5-E Marrs McLean, 778 bbl., ¼-in. choke, top sand 8,392 ft., T.D. 8,402 ft.
West Beaumont field: Stanolind 15 Kieth & Dowlen, 116 bbl., ⅛-in. choke, perf. casing 5,364-87 ft., T.D. 5,392 ft.

Liberty County

Esperson field: General Crude 2 Zaruba, 324 bbl., ¼-in. choke, top sand 7,420 ft., T.D. 7,700 ft.
South Liberty field: Sun 61 Mitchell, dry, T.D. 1,128 ft.

Galveston County

Dickinson field: Pan American 1 White, gas well, perf. casing 8,370-90 ft., T.D. 8,431 ft.

Matagorda County

Van Vleck field: Skelly 20-B Cobb, 270 bbl., 5/32-in. choke, perf. casing 7,482-88 ft., T.D. 7,495 ft.

Tyler County

Joe's Lake field: Republic 50 fee, dry, T.D. 7,711 ft.

Wharton County

Magnet field: Humble 35 Cockburn, 111 bbl., ⅛-in. choke, top sand 5,527 ft., T.D. 5,539 ft.
Withers field: Texas 70-B Pierce, 47 bbl., 12/64-in. choke, perf. casing 5,538-42 ft., T.D. 5,545 ft.

TEXAS GULF COAST DRILLING REPORT

Brazoria County

Humble 4 Hubbard, Rowan field, T.D. 8,960 ft., making drill-stem test.
Phillips 1 Triangle Development Co., Chocolate Bayou area, drilling sand and shale 11,850 ft.
Pure 1 Greenameyer, Manor Lake area, rigging up.
J. Newton Rayzor 2 Christian, 1,300 ft. south of discovery well Chenango field, drilling shale and lime 8,030 ft.
Strake 1 Griffity, Halls Bayou area, T.D. 10,332 ft., found casing collapsed at 10,163 ft., milling on casing.

Harris County

Sun 1 Foster Lumber Co., northeast of Humble field, A. Turner Survey, drilling shale 7,110 ft.

Jefferson County

British American Producing Co. 2-71 State, Gulf of Mexico, drilling sandy shale 6,157 ft.

Liberty County

H. E. Dishman et al 1 C. J. Robertson, Tanner Bayou area, A. M. de Lajarza Sur., drilling shale 5,025 ft.
Charles G. Hooks 1 Lockin, S. Kirkham Sur., drilling sand and shale 1,250 ft.

Matagorda County

Stanolind 1 Huebner, Bay City area, E. Hall Sur., drilling sand 9,390 ft.

Wharton County

F. W. Michaux et al 1 Koehl, drilling sandy shale 2,995 ft.

California Fields

(Continued from Page 64)

north and finally toward the upland area without success. Tests drilled on the permit showed that the Vaqueros and Sespe were barren and this subsurface structure does not justify any further exploratory work for the present. Bolsa Chica Oil Co. will salvage its steel and wood pier built several years ago at a cost of approximately $175,000. The pier extends out into the Pacific for a distance of 1,380 ft. at right angles to the shore line.

COASTAL DISTRICT COMPLETIONS

Aliso Canyon Field

Associated 17 Porter 28-3n-16w
Gas lift 1,410 bbl., 24-gravity, 0.5 per cent cut, 650,000 cu. ft. net formation gas. Elev. 2,645 ft. T.D. 5,865 ft. 8⅝-in. water string 5,255 ft. 653 ft. 6⅝-in. liner 5,862 ft. Perf. 5,241-5,862 ft. 5,802 ft. 3-in. tubing. Completed in Porter zone of Modelo formation. 151 days' drilling time. Los Angeles County.

Newhall-Potrero Field

Barnsdall 17 R.S.F. 27-4n-17w
Flowed 1,356 bbl., 33.9-gravity, 0.2 per cent cut, 925,000 cu. ft. gas. 30/64-in. bean. Pressures 585/200 lb. Elev. 1,191 ft. T.D. 7,352 ft. 7-in. water string 7,100 ft. 277 ft. 5½-in. liner 7,350 ft. Perf. 7,118-7,319 ft. 7,319 ft. 2½-in. tubing. Completed in Modelo formation. 47 days' drilling time. Los Angeles County.

COASTAL DISTRICT WILDCATS

Castaic District

Barnsdall 1-17-A Honor rancho 5-4n-16w
Grading road and location. Rained out. Los Angeles County.
Morse-Mangold 1 McDermott 26-5n-17w
Grading location and roads. Rained out. Los Angeles County.

Del Valle District

R. E. Havenstrite 1 Vasquez 21-4n-17w
Drilling sandy shale 4,774 ft. Los Angeles County.
Universal Consd. Oil Co. 1 Dennis 21-4n-17w
Derrick erected. Rained out. Los Angeles County.
Aztec Oil Co. 1 Sanborn 6-3n-16w
Location on N flank of major Pico anticline. Will test upper and lower Modelo formation. Los Angeles County.

Huasna District

Harvey Oil Corp. 2 Huasna 11-32s-14e
Drilling in sand and shale 2,561 ft. Elev. 1,401 ft. San Luis Obispo County.

Newhall District

H. T. Purman 1 Needham 13-3n-16w
Grading road and location. Rained out. 1,500 ft. to 1,600-ft. test. Elev. 1,681 ft. Los Angeles County.

Oklahoma Fields

(Continued from Page 67)

Seminole County

Cummings and Sunset 1 Brown ... SW SE SE 14-9-7
P.B. from Wilcox to Misener, 4,050-60 ft., and Hunton, 4,080-4,106 ft., acid, 15,000,000 cu. ft. gas, 30 bbl. oil an hr., testing.
Seiboldt Drlg Co. 1 Boren ..... SW SE SW 34-6-6
Sand 1,795 ft., show oil, coring at 1,795 ft.
Alma 1 Borden ..... NE SE NW 4-8-8
T.D. 4,326 ft., P.B. 3,110 ft., perf. Cromwell 3,310-46 ft., flowing by heads 148 bbl. plus 6 bbl. water, estimated 1,500,000 cu. ft. gas, testing.
Bryan Petroleum Co. 1 Wisey ..... NE SE SE 5-11-8
First report.
Mico 1 B. F. Davis ..... NE NE NE 33-10-8
Cored well stained sand 1,529-39 ft., drill-stem test 1,525-39 ft., open 1 hr., recovered 250 ft. mud and salt water, drilling 2,505 ft.

Stephens County

Skelly 4 Frensley ..... NE NE 35-1s-5w
Ran electric log 4,416 ft., drilling in shale 4,545 ft.
Gulf 1 Krieger ..... E½ NE SW 3-2-5w
Drilling 5,809 ft., shale.

By T. R. INGRAM

Sundance Discovery at Wilson Creek Flows 800 Bbl. a Day

DENVER, Colo., Mar. 10.—A discovery in a deeper horizon was chalked up for the Wilson Creek field in Colorado when Texas Co.-California Co. 5 Unit flowed at the rate of 800 bbl. a day from the Sundance on a preliminary test.

The Tensleep horizon in the Mahoney Dome field was extended ¼ mile in Sinclair-Wyoming 4-F Mahoney which made 766 bbl. initial through choke on tubing. Lance Creek had one recompletion in Continental 6 Otto Rohlff for 133 bbl. from the Leo sand after deepening from the Sundance. Two more Sundance wells will be deepened by Continental and Ohio. Texas 1-C State, La Barge field, pumped 42 bbl. initial.

Cut Bank was extended ½ mile on the south in Frank Henderson 1 Tribal-190 which swabbed 186 bbl.

SUMMARY OF COMPLETIONS

Wyoming

	No.	Prod.	Footage
Oil wells	2	808	5,659
Recomp. oil wells	1	133	.....
Montana			
Cut Bank: Oil wells	3	678	8,586
Other fields: Oil wells	1	149	1,633
Total	4	827	10,219

A. B. Cobb 3 Tribal-187 swabbed 192 bbl. and Glacier Production 2 Williams swabbed and flowed 300 bbl. Kevin-Sunburst had one completion, Ohio 6 Lind, for 149 bbl. on the pump.

COLORADO

Boulder County

J. A. Warren 3 Maxwell.....NW NE NW 24-1n-71w
Drilling 1,357 ft. in hard, black limy shale.

El Paso County

F. F. Hintze 1 State.....CEL SE SE 16-11s-60w
Drilling 1,840 ft. in rotten shale, carrying 6⅝-in.

Huerfano County

I. E. Sideman-White 1-X Martinez SW NE 33-26n-67w
Drilling below 1,674 ft.

La Plata County

E. B. Klem 1 Olbert.....NW SW 9-35n-12w
S.D. 4,050 ft. account weather, resume March 15.
Nick Spatter 1-X Bryce.....SW SW 31-33n-9w
T.D. 4,400 ft., recemented caves at 4,000 ft.

Larimer County

J. E. Carruthers 1 Hogsett.....NE SE NE 20-4n-69w
Ready to spud.
E. P. Gallup 1 Hanson.....C SE NW 36-10n-71w
S.D. 312 ft., prepare to resume.

Las Animas County

Barney Oil 1 Dutto-Marchisio....NW NW 32-33n-62w
Drilling 1,218 ft.

Logan County

West Plains 1 Sheldon.....SE NW SW 3-10n-55w
S.D. 3,415 ft., will change to rotary.

Moffat County

Mountain Fuel Supply 2-A Musser, CWL NW SE 4-11n-97w, reported a completion last week for 18,000,000 cu. ft. of gas in 24 hours, marking a mile extension of the proven area of the Powder Wash field. It had gas sands at 2,161-78 ft. and 2,500-04 ft., and rock pressure was 778 lb. Water sands were encountered at 1,993-2,022 ft., 2,220-33 ft., and 2,248-77 ft.

Mountain Fuel Supply 7 Wilson.....
NE SW NW 23-12n-100w
Spudded.
Mountain Fuel Supply 3 Musser.....
CNL NW SW 5-11n-97w
Drilling 1,912 ft.
Steamboat Springs Synd. 1 Sutton NE NE SW 1-5n-96w
T.D. 2,335 ft., show oil with water, moving in 5-in. for shutoff.

Rio Blanco County

Texas Co.-California Co. 5 Unit, NW NE NE 34-3n-94w, Wilson Creek, is a discovery in the Sundance sand and will make an excellent producer. The three producing wells in the field were all completed in the Morrison sand. At 6,556 ft. it made 800 bbl. in 24 hours on an open-flow test. Top of the Sundance was at 6,543 ft. It was then deepened to 6,570 ft. and is being completed. In a short test at this depth through the drill stem it made 26 bbl. an hour. It will not be produced at capacity, but will be held down to 250 or 300 bbl. a day under a tubing choke. Two more wells will be drilled this spring to the Sundance on the top of the structure.

Routt County

Mid-Colorado Pet. 1 Omholt.....NE NE SE 29-4n-87w
T.D. 3,160 ft., recementing 6⅝-in at 2,967 ft. to shut off Dakota water.
Craig-Moore 1-X Erwin.....C SW NE 33-7n-85w
Trying to shut off water at 2,615 ft.

WYOMING

Big Horn County

McDonald & Curtis 1 Orchard.....SE NW 24-51n-93w
Drilling 1,235 ft. with H.F.W.
N. B. Ketchersid 1 Mann.....SW SW SW 11-55n-97w
Drilling 611 ft.

Converse County

U. & I. Oil Synd. 1 Beaver.....SE NW 29-35n-68w
T.D. 1,000 ft., moving in heavier machine, Walker dome.

Carbon County

The Tensleep oil horizon on Mahoney dome was extended ¼ mile to the west in Sinclair-Wyoming 4-F Mahoney, C SW NW 34-26n-88w. It was completed at 4,532 ft. for 766 bbl. in 24 hours through a choke on the tubing. Top of the Tensleep was at 4,408 ft. and the 7-in. was set at 4,410 ft. Location is 1,320 ft. west of 3 Mahoney, the discovery well in the Tensleep, which was completed in the fall of 1938 for 172 bbl. in 24 hours at 4,486 ft., total depth. In November 1940 it was deepened to 4,505 ft., and recompleted for 511 bbl. in 15½ hours, resulting in a discovery in a deeper pay. An east offset to the discovery, 2-A Mahoney, was drilled in 1939 and completed at 4,507 ft. for 80 bbl. Last December it was drilled to the deeper pay and recompleted for 596 bbl. at 4,520 ft., total depth.

Sinclair-Wyoming 18 Wertz.....SE SE NW 7-26n-89w
Drilling in Tensleep at 5,765 ft., cemented 7-in. at 5,719 ft.
Sinclair-Wyoming 5-F Mahoney C NW SE 34-26n-88w
Rigging up.
Ohio 12 State.....C W½ NE 34-20n-78w
Drilling 3,451 ft.

Natrona County

Investors Oil 31 Government..NW NW SW 2-33n-89w
Drilling 1,504 ft. in red beds, South Casper Creek.
Investors Oil 32 Government....SE SE NE 3-33n-89w
Location, first report.

Niobrara County

Continental 6 Otto Rohlff, C SW SW 32-36n-65w, Lance Creek, was recompleted in the Leo sand at 5,450 ft. for 133 bbl. of oil and 825 bbl. of water in 24 hours after acidizing with 500 gal. It is producing through perforated 4¾-in. at 5,446 ft. It was originally completed in the Sundance at 3,819 ft. in 1936 for 2,200 bbl. initial.

Ohio 7 Converse Sheep, which was completed in the lower Sundance at 3,853 ft. in 1935 for 2,604 bbl. first 24 hours, will be deepened to the Leo sand.

Continental 1 Emil Rohlff, which was completed in the Sundance for 50 bbl. a day in 1936 at 3,967 ft., is being deepened to the Leo sand.

Ohio 7 Converse Sheep.....C NW SE 32-36n-65w
T.D. 3,853 ft., rigging to drill deeper.
Continental 1 Rohlff.....CSL SE NW 32-36n-65w
Drilling to 3,976 ft.
Argo 16 Elliott.....NW SE NW 5-35n-65w
Drilling 4,627 ft., cored saturated Sundance at 3,843-93 ft.
Continental 2-A Schuricht.....C SE NE 6-35n-65w
Drilling 4,416 ft.
Ohio 18 Putnam.....1,200 ft. E, NW cor. 4-35n-65w
T.D. 5,485 ft., cemented 7-in. at 5,381 ft., testing, swabbed 150 bbl. in 24 hr.
Ohio 19 Putnam.....CWL NW 4-35n-65w
Drilling 3,231 ft., cemented 11¾-in. at 314 ft.
Continental 24 Tom Bell.....NW NW NW 34-36n-65w
T.D. 5,444 ft., cemented 7-in. at 5,275 ft., swabbing, will reacidize.
Western Petroleum 1 Mosier.....SW SW 31-35n-64w
Building rig.

Park County

Enalpac 3 Pauline O.P.C.-1.....SE SE 5-51n-100w
Spudded.
Stanolind 6 Rosenberg.....NW NW NW 25-58n-98w
T.D. 2,747 ft., filled back to 2,710 ft. and redrilling.
Enalpac Oil & Gas 1 Cactus ..SW SE SE 33-51n-100w
Drilling 3,205 ft., top Embar 3,086 ft.

Platte County

B. E. van Arsdale, of Denver, is blocking up acreage on a long northeast-southwest trend in Platte County, between the Colorado & Southern Railroad and the eastern boundary of the county and extending down to Horse Creek in Laramie County. Included is a large block of state land for which leases were recently closed.

Sublette County

Texas 1-C Government, SW NW NW 24-27n-113w, La Barge field, pumped 42 bbl. first 24 hours from the Wasatch at 1,127 ft., total depth. The 8-in. was set at 1,071 ft.

North La Barge Oil 7 Govt. .....C SE NE 28-27n-113w
Location.
Charles Lackey 1 Government NE SE SW 33-27n-113w
Cemented 8¼-in. at 1,260 ft.
Klumpe Syndicate 1.....NE SW NE 28-27n-113w
Drilling 1,794 ft.
Marvel Oil 6 Government....CEL SE SE 28-27n-113w
Spudded.

Sweetwater County

Vermillion Oil 1 Government...SW NE NE 6-12n-99w
Location.
Sinclair-Wyoming 96-A.....NE SE NE 10-26n-90w
Drilling 3,806 ft.
Sinclair-Wyoming 95-A..... SW NW NW 11-26n-90w
Drilling 3,806 ft.
Sinclair-Wyoming 98-A.....NW NW SW 11-26n-90w
T.D. 667 ft., P.B. to 569 ft., swabbed 15 bbl. oil per hour from Wall Creek, top 390 ft., prepare to pump.

Uinta County

Stove Creek Oil 2 Govt. .....C SW NW 26-14n-119w
Resumed, drilling 1,352 ft.

Weston County

Lodgepole Oil 1.....9-43n-65w
Rigged and ready to spud, southwest of Osage field.
Al Jones 15 Government.....NW NW NE 21-46n-63w
Spudded.
Osage Trust 1 fee.....NE SW SE 10-46n-63
Rigging for rotary test to the Minnelusa and deeper horizons.
Lem Johnston 1.....NW SW 24-44n-63w
T.D. 3,563 ft., sidetracking at 3,300 ft.
Lanam Crowley 1.....SW SW NW 8-46n-63w
S.D. 686 ft., showing for a well.

MONTANA

Glacier County

The south end of the Cut Bank field chalked up a ½-mile extension in Frank Henderson 1 Tribal-190, which swabbed 186 bbl. first 17 hours at 2,852 ft., total depth. The Sunburst was dry at 2,746-56 ft., and the 7-in. was cemented on top of the Cut Bank at 2,805 ft. The main pay was at 2,836-51 ft. It is located ½ mile southeast of Consolidated Gas 1 Frary-Tribal-191, completed last month for 560 bbl. first 24 hours, one of the best producers for the year.

A. B. Cobb 3 Tribal-187, SE SE NW 19-32n-5w, swabbed 192 bbl. first 24 hours at 2,792 ft. from the Cut Bank sand at 2,750-88 ft., the main pay being at 2,780-88 ft.

Glacier Production 2 Williams, C NW SE 21-33n-5w, close to the line between the oil and gas fields, flowed and swabbed 300 bbl. a day at 2,938 ft. after plugging back from 2,942 ft. The Sunburst at 2,875-2,910 ft. had a good show of oil. The 7-in. was set at 2,915 ft. and the Cut Bank was at 2,915-38 ft. The main pay was at 2,935-38 ft. It started flowing at 2,929 ft.

Glacier Prod. 3 Corrigeux, 1,320 ft. from W and 440 ft. from N line.....21-33n-5w
Location, first report.
Hannah-Porter 1 Tribal-189.....NW SW SE 19-32n-5w
Drilling 450 ft.
Santa Rita 3 Jordan.....C SE NE 7-32n-5w
Standing 585 ft., rig burned down, waiting on equipment.
Ed Reagan 1 Tribal-194.....CEL SE NE 22-37n-7w
Drilling 2,160 ft.

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Hill County

Cobb-Yale Oil 1 Government.....C SW NE 19-37n-15e Spudded and S.D., moving in rotary, Signal Butte.

Toole County

Following a conference between H. J. Duncan, district supervisor, and H. M. Peden, district engineer of the U. S. Geological Survey, and T. H. Harriman, state

(Continued on Page 83)

Kentucky Fields

(Continued from Page 72)

The Kendall tract is adjacent to a hard-surfaced road and according to Mr. Foreman and his associates oil from wells on the tract can easily be trucked to a refinery, eliminating the necessity of building a pipe line.

The Inland Gas Corp. hit a dry hole in No. 215 on the J. H. Fraley land on Rocky Branch in Elliott County. The well reached a total depth of 4,200 ft., going 150 ft. in the Knox dolomite. Much interest was centered on the operation due to its deep nature and its position on the structure. This position, plus the depth, made it one of eastern Kentucky's deepest tests when compared to other recent operations of a similar nature.

Cunningham et al hit a dry hole on the Endicott tract in Martin County a few weeks ago, after going down 4,856 ft. It was a Clinton test and both shale and Berea were shot without production. Cunningham is now engaged in another operation on the same tract.

With the exception of a well drilled by Thomas Fraley in the Big Blaine area of Lawrence-Martin-Floyd field in 1929, the Inland and Cunningham wells have been the deepest. The Fraley well was down 4,975 ft. However, structural location leaves the honor of being the deepest well uncertain. One thing in common, however, was lack of production.

Cumberland Petroleum's deep test, No. 64, on the L. C. Bailey farm at State Road Fork near Oil Springs in Magoffin County and the Allen-McClure operation on the Chism tract near Ruckerville in Clark County are the only definite deep tests now under way. Data were not available from either well this week.

EASTERN KENTUCKY COMPLETIONS

Powell County

Jones & McIntosh 2 L. A. Townsend, on South Fork, 840 ft., 15 bbl.
Albert Brian and Smith 5 George A. Faulkner, on South Fork, 930 ft., 10 bbl.
Brian & Smith 3 Park Vanderpool, on Williams Creek, 860 ft., 10 bbl.

Knott County

Kentucky-West Virginia Gas Co. 5283 Joseph Hall, 3,068 ft., shale, 539,000 cu. ft. gas, 235 lb., in 16 hr.

Pike County

Kentucky-West Virginia Gas Co. 5294 G. W. Carroll, on Bacon Branch, 122 ft., Salt sand, 327,000 cu. ft. gas, 335 lb. in 48 hr.

WESTERN KENTUCKY

Interest of major companies in exploration in western Kentucky was evidenced this week by the completion by Carter Oil Co. of a stratigraphic test in the Zion district of Henderson County, the Carter 1 H. P. Barrett. Stratigraphic core-drilling tests have been made extensively in Illinois and other parts of the country, but have been rare in this area. Extreme nonconformity of the horizons has, in the past, discouraged extensive geophysical work in western Kentucky and the revival of this type of preliminary exploration has encouraged many operators in the area.

Results of drilling for production this week were not so favorable as four of the five completions reported were dry holes. However, there were three starts. Cumberland et al 6 Ora Brown heirs in the Huntsville district of Butler County, and Toller 4 E. F. Lebold and Master Oil Co. 12 E. W. Richmond, both in the Handyville district of Daviess County.

WESTERN KENTUCKY COMPLETIONS

Daviess County

Cane Run School district: Cane Run Petroleum 5 Nannie Alsip, dry, T.D. 715 ft.

Grayson County

Leitchfield district: Sun 1 George Wood, dry, T.D. 3,770 ft.

Hancock County

Saunders School district: Sands Petroleum 3 Wavie Newton, dry, T.D. 395 ft.

Henderson County

Four miles south of Mount Vernon, Ind.: Minton & Tomberlin 1 Ben Rash, dry, T.D. 2,770 ft.

McLean County

South Livermore district: W. E. Hupp et al 2 Livermore Timber Co., 100 bbl., 60-qt. shot, Barlow sand 1,362-84 ft.

By
STAFF CORRESPONDENT

Drilling Swings to Mt. Carmel And Other Smaller Pools

MATTOON, Ill., Mar. 10.—In the face of declining production and with no large pools in prospect for development, Illinois oil operators are hastening to develop many of the small pools which have been discovered in the state during the past year. One of the most active of these at the present time is the Mount Carmel pool of Wabash County. This pool was discovered on January 30, 1940, when Delta Drilling 1 Utter, SE SE NE 17-1s-12w, was completed as a small Cypress sand producer. Delta's discovery well produced 19 bbl. initially, a poor indication of the production to be obtained later by wells which produced as much as 600 and even 1,500 bbl. of oil a day. Although the pool was discovered early in 1940, extensive development did not begin until the McClosky was discovered as an excellent pay horizon about 2 months ago. Only a few weeks after the McClosky discovery, Hall Jordan touched off a townsite drilling boom with the completion of 1 Canedy inside the city limits of Mount Carmel. Quick to see probable disaster in an uncontrolled drilling boom, the city of Mount Carmel enacted and is rigidly enforcing strict well-spacing laws which permit only one well in each block for each pay horizon. The city blocks average about 3½ acres with three proven pays in the area, the Biehl and Cypress sands and the McClosky lime. In order to obtain a drilling permit, operators must have at least 51 per cent of the lots in each block leased. The rigid enforcement of these laws will undoubtedly lead to a sensible and profitable townsite development for Mount Carmel.

Mount Carmel has 20 active operations, making it the third most active pool in the state at the present time. Present indications are that the pool will soon receive an extension about a mile to the southward where E. O. Olds has reported that good promise has been shown in both the Cypress and McClosky by an electrical log at 1 Parkinson in Block 52. The Mount Carmel pool will probably become one of the state's best producing small pools this year.

Trenton wells.—Although the Trenton wells in the Salem pool continue to be small, each new completion has boosted confidence in Trenton production by being a larger well than the previous one. Magnolia 33 Shanafelt late last week gave promise of being one of the best Trenton producers ever completed in Illinois by flowing 324 bbl. of oil in 24 hours while being cleaned out at 4,606 ft., only 5 ft. off bottom. At the end of the week, nine Trenton wells were reported flowing in the Salem pool other than those which already had been completed.

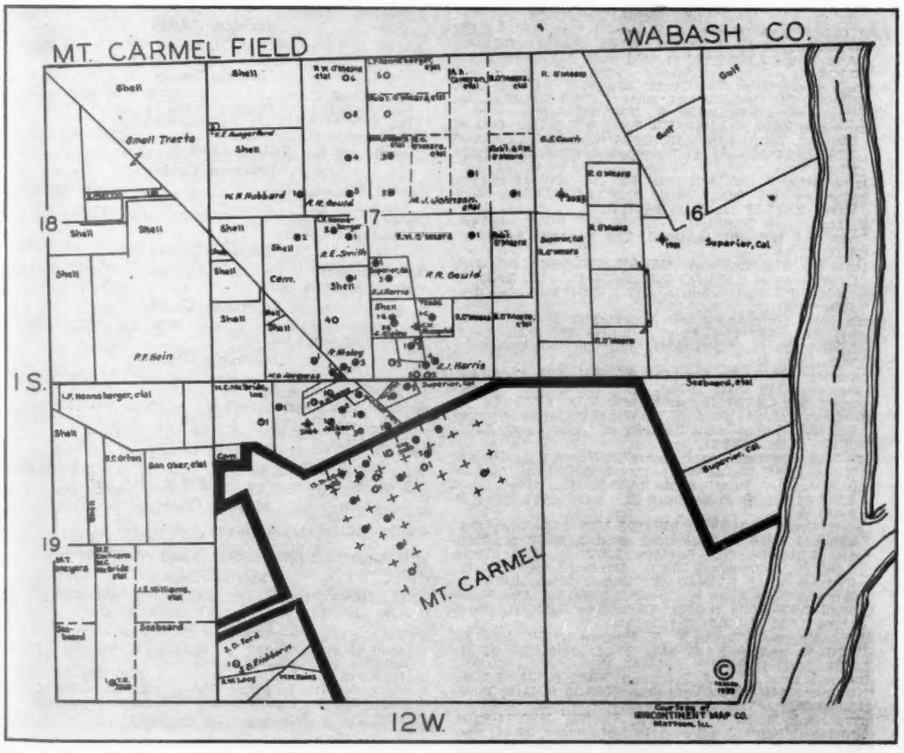
The Gulf Refining Co. late last week reported 35 ft. of saturated Cypress sand at its 2 L. P. Hill, the company's second prospective producer in the new East Patoka pool of Marion County. The well, located in NW SW SW 26-4n-1e, after completing the Cypress pay at 1,359-70 and 1,372-96 ft., was drilled on as the first Benoist test of that area. The Benoist was topped at 1,495 ft., but no sand was encountered and the well was plugged back to 1,391 ft. where operators are planning to cement 5½-in. casing. No estimates as to production possibilities of the well have yet been ventured. However, Gulf 1 Hill made a 395-bbl. producer from only 6 ft. of saturation in the same field.

Eason Oil 1 Kiest, SE SE SE 27-4n-1e, most recent completion in the East Patoka pool, pumped 146 bbl. from the Cypress sand in an initial production test last week.

SUMMARY OF COMPLETIONS

	No.	Bbl.	Footage
Oil wells: East Calvin	3	773	7,979
Hoodville	4	1,231	12,254
Louden	2	138	3,116
Mason	3	453	7,526
Mill Shoals	2	244	6,504
Mt. Carmel	4	875	9,319
North New Harmony	2	929	5,450
Patoka	3	350	4,161
West Enterprise	2	246	6,153
Other pools	10	646	27,933
Dry holes: Fields*	7	.....	13,457
Wildcats	11	.....	26,053
Total	53	.....	129,905
Recompletions	8	970	.....

*Louden 2, Omaha 1, McKinley 1, East Calvin 2, South New Harmony 1.



The Mount Carmel oil pool, north of and inside the town of Mount Carmel, where strict enforcement of well-spacing laws is hoped to insure a sane and profitable townsite development. Steadily increasing activity is rapidly making this area one of the hot spots in the Illinois basin

ILLINOIS COMPLETIONS

Bond County

Wildcat: J. Farrelly 1 Kyle, SW NW NW 28-4n-4w, dry, slight show oil 1,359 ft., old well deepened from 1,327-1,430 ft.

W. S. Tatum 1 Andrews, SE NE SW 7-4n-2w, dry, Glen Dean 865 ft., Cypress 1,016 ft., Weller 1,079 ft., Paint Creek 1,138 ft., Ste. Genevieve 1,260 ft., Chattanooga 2,358 ft., Devonian 2,420 ft., T.D. 2,539 ft.

Clinton County

Wildcat: R. Bartmes 1 Reed, NE SW NW 1-2n-2w, dry, T.D. 1,311 ft.

Edwards County

Wildcat: Roy Powers et al 1 Strauss, E½ SE SW 4-1s-14w, dry, Menard 2,244 ft., Waltersburg 2,314 ft., Waltersburg sand 2,332-54 ft., Vienna 2,376-82 ft., Tar Springs sand 2,406-45 ft., Glen Dean 2,498 ft., Golconda 2,595 ft., Barlow 2,706-13 ft., Cypress sand 2,723-88 ft., Renault 2,940 ft., Aux Vases 3,016 ft., Ste. Genevieve 3,035 ft., McClosky 3,088-3,116 ft., St. Louis 3,154 ft., T.D. 3,155 ft.

Effingham County

Mason pool: Hinkle 1-A Townsite, SE SE NW 22-6n-5e, pumped 45 bbl., 500 gal. acid, McClosky 2,498-2,500 ft., T.D. 2,505 ft.

J. R. Benson 1 Layson, NW SW NE 22-6n-5e, pumped 240 bbl., 2,500 gal. acid, pay 2,496-2,513 ft., McClosky 2,495½ ft., T.D. 2,513 ft.

Luingenfelder & Williams 1 Sloane, SE NE NW 22-6n-5e, pumped 168 bbl., 1,000 gal. acid, 2,491-96 ft., 2,501-06 ft., T.D. 2,508 ft.

Fayette County

Louden pool: Carter 1 J. Richards, SW SE SW 1-8n-3e, swabbed 84 bbl., 15-qt. shot 1,523-28 ft., Cypress sand 1,517-39 ft., T.D. 1,539 ft.

Carter 4 Sherman, NE SE NE 30-8n-3e, dry, Glen Dean 1,398 ft., Cypress 1,524 ft., Cypress sand 1,561-88 ft., T.D. 1,591 ft.

Carter 3 A. Miller, SW SW SE 8-7n-3e, swabbed 54 bbl., 30-qt. shot 1,516-26 ft., 10-qt. shot 1,504-07 ft., T.D. 1,577 ft., P.B. 1,530 ft.

Vanderbark 5 Griffith, NE NW SE 17-7n-3e, dry, Glen Dean 1,341 ft., Cypress 1,464 ft., Weller 1,495-1,510 ft., T.D. 1,549 ft.

Franklin County

Wildcat: Vanderbark 1 U. S. Guaranty, NW SW SE 34-7s-4e, dry, Kincaid 1,774 ft., Menard 2,178 ft., Glen Dean 2,405 ft., Golconda 2,568 ft., Cypress 2,718 ft., Paint Creek 2,850 ft., Renault 3,000 ft., Ste. Genevieve 3,100 ft., T.D. 3,193 ft.

Benton pool: Shell 1 C. W. & F. Coal Co., SE NW NE 24-6s-2e, pumped 145 bbl., 10-qt. shot 2,141-51 ft., Tar Springs 2,123 ft., T.D. 2,151 ft.

Gallatin County

Omaha pool: Cameron Bros. 2 Jones, NE SE SW 4-8s-8e, dry, Pennsylvanian sand 508-68 ft., T.D. 575 ft.

Wildcat: Frederick & Moore 1 fee, NE NW NE 8-9s-10e, abandoned location.

Hamilton County

Hoodville pool: Carter 4 Friel, NW SE SE 27-5s-6e, pumped 50 bbl., Aux Vases 3,054-59 ft., T.D. 3,059 ft.

Kingwood 3 Morris, NE SW NE 34-5s-6e, pumped 85 bbl. oil and 4 bbl. water, 5-qt. shot 3,082-90 ft., Aux Vases 3,080 ft., old well deepened from 2,997-3,090 ft.

Carter 5 Friel, SW SE SE 27-5s-6e, location abandoned.

Ohio 5 H. Matheny, NW SW SE 3-6s-6e, flowed 390 bbl., Aux Vases 3,065 ft., T.D. 3,077 ft.

Ohio 2 A. B. Moore, NW SE SW 3-6s-6e, flowed 601 bbl. from Aux Vases and Benoist, 10-qt. shot 2,968-72 ft., Benoist sand 2,964-76 ft., Aux Vases 3,048 ft., T.D. 3,072 ft.

Texas 9 Edwards, NW SE NE 3-6s-6e, pumped 190 bbl., 10-qt. shot 2,936-46 ft., Benoist 2,932-56 ft., T.D. 3,046 ft.

Texas 5 C. Hood, NE NE NW 3-6s-6e, pumped 190 bbl. from Aux Vases and Benoist, 10-qt. shot 2,950-60 ft., old well deepened from 3,047-52 ft.

Wildcat: R. B. Martin 1 McKenzie, NW NE NW 36-6s-7e, dry, Kincaid 2,011 ft., Degonia 2,141 ft., Clore 2,204 ft., Palestine 2,252 ft., Menard 2,328 ft., lower Menard 2,363 ft., Waltersburg 2,407 ft., Vienna 2,461 ft., Tar Springs 2,471 ft., Glen Dean 2,569 ft., Hardinsburg 2,609 ft., Hardinsburg sand 2,633

ft., Golconda 2,835-43 ft., Cypress sand 2,868 ft., Paint Creek 3,005 ft., Benoist 3,012 ft., Benoist sand 3,063 ft., Renault 3,079 ft., Aux Vases 3,144 ft., Ste. Genevieve 3,182 ft., Rosiclare 3,202 ft., Fredonia 3,212 ft., T.D. 3,295 ft.

Woodriver Dev. 1 Lawrence-Walker, SW NE NW 26-4s-7e, was abandoned at 3,513 ft., flowed 37½ bbl. in 1½ hr. when casing was pulled, P.B. 3,290 ft., ripped casing in Aux Vases 3,269-90 ft., 30-qt. shot 3,275-90 ft., pumped 21 bbl., 20 per cent water.

Jasper County

Dundas pool: Pure 3 C. H. Snider, NW NW SE 6-4n-10e, pumped 72 bbl., 5,000 gal. acid, pay 2,868-78 ft., Fredonia 2,865 ft., T.D. 2,895 ft.

Pure 1 Wachtel-Myers, W½ SE SW 7-4n-10e, pumped 57 bbl., natural, McClosky 2,955-63 ft., T.D. 2,980 ft.

Madison County

Wildcat: F. C. Kiskadden 1 G. A. Fisher, SE SW NE 27-5n-8w, dry, T.D. 320 ft.

Marion County

Patoka pool: Adams 19 Merryman, SW NE SW 21-4n-1e, pumped 33 bbl., 30-qt. shot 1,414-31 ft., Benoist 1,397-1,431 ft., T.D. 1,431 ft.

Eason Oil 1 Kiest, SE SE SE 27-4n-1e, pumped 146 bbl., 15-qt. shot 1,355-62 ft., Cypress sand 1,346 ft., T.D. 1,362 ft.

Schoenfeld et al 2 H. G. Hudsferth, W½ SE SE 27-4n-1e, pumped 171 bbl., 15-qt. shot 1,357-68 ft., Cypress sand 1,353½ ft., T.D. 1,368 ft.

Salem pool: Magnolia 32 Shanafelt, NW SE SW 29-2n-2e, flowed 261 bbl., 100-qt. shot 4,540-4,609 ft., Trenton 4,504 ft., T.D. 4,614 ft.

Richland County

North Noble pool: Oilwell Drlg. 2 Blain, NE NW SW 24-4n-9e, pumped 19 bbl., 21-qt. shot 2,588-98 ft., Cypress sand 2,589 ft., T.D. 2,598 ft.

St. Clair County

Wildcat: B. W. Fitzgerald 1 Ittner, SE SW SE 9-1n-8w, location abandoned.

Shelby County

Wildcat: Stewart 1 McGarr, NE NE SW 26-12n-2e, dry, Glen Dean 1,302 ft., T.D. 1,637 ft.

Wabash County

Mount Carmel pool: R. Gilston 1 R. Goeings, S½ SE SE NE 18-1s-12w, pumped 150 bbl., 18-qt. shot 2,068-74 ft., Cypress sand 2,059 ft., T.D. 2,402 ft., P.B. 2,077 ft.

Hall Jordan 1 Canedy, NW NW NE 20-1s-12w, pumped 125 bbl. oil and 100 bbl. water, 15-qt. shot 2,032-39 ft., T.D. 2,390 ft.

Hall Jordan 1 L. Coursey, NE NW NE 20-1s-12w, pumped 120 bbl., 20-qt. shot 2,060-77 ft., Cypress sand 2,058 ft., T.D. 2,077 ft.

Roberts 1 Crumen-Hudson, NW SW NW NE 20-1s-12w, pumped 408 bbl. natural, perf. 2,387-97 ft. in McClosky, T.D. 2,450 ft.

South Griffin pool: Longhorn 8 Helm, NW NE NE 27-3s-14w, pumped 100 bbl., 2,000 gal. acid 2,781-93 ft., Aux Vases 2,765-87 ft. (saturated), McClosky 2,893-97 ft., T.D. 2,897 ft.

Wildcat: Illinois Prod. 1 H. E. Brown, NW NW SE 1-2s-14w, dry, Menard 2,073 ft., Waltersburg sand 2,158 ft., Vienna 2,178 ft., Tar Springs sand 2,250 ft., Glen Dean 2,314 ft., Hardinsburg 2,383 ft., Barlow 2,578 ft., Cypress sand 2,602 ft., Benoist sand 2,710-30 ft., Renault 2,734 ft., Aux Vases 2,800 ft., Ste. Genevieve 2,853 ft., Rosiclare 2,872 ft., Fredonia 2,900 ft., T.D. 2,950 ft.

Wayne County

West Enterprise pool: Pure 2 J. S. Elliott-A, E½ SE NW 1-1n-7e, pumped 120 bbl. oil and 3 bbl. water, 5,000 gal. acid, show oil 3,020-22 ft., 3,058-60 ft., T.D. 3,068 ft.

Pure 4 H. Garrison, W½ NW SW 36-2n-7e, pumped 126 bbl. oil and 18 bbl. water, 5,000 gal. acid, McClosky 3,028-30 ft., 3,077-79 ft., T.D. 3,085 ft.

Enterprise pool: Pure 3 W. S. Hubble-B, SW SE SW 29-2n-8e, pumped 126 bbl. oil and 46 bbl. water, 5,000 gal. acid, pay 3,052-57 ft., Fredonia 3,040 ft., T.D. 3,095 ft.

Pure 2 J. S. Hubble, W½ NE SW 32-2n-8e, pumped 7 bbl. in 4 hr., pumped off, perf. 2,910-30 ft., pay 3,026-29 ft. and 3,034-37 ft., Fredonia 3,020 ft., T.D. 3,075 ft., P.B. 2,975 ft.

Clay City pool: Pure 3 J. E. Mosely-B, W½ NW SW 4-2n-8e, pumped 2 bbl. oil and 10 bbl. water, 1,700 gal. acid, pay 2,965-69 ft., T.D. 3,118 ft.

Wildcat: Carl Robinson 1 C. K. Bathwell, W½ NW SE 25-2s-8e, dry, Aux Vases 3,278 ft., Ste. Genevieve 3,324 ft., Rosiclare 3,355 ft., Fredonia 3,383 ft., McClosky 3,397-3,402 ft., T.D. 3,452 ft.

C. Robinson 1 Leech, NW SW NW 14-2s-8e, dry, Fredonia 3,366 ft., old well deepened from 3,364-3,400 ft.

Washington County

McKinley pool: DeKalb Synd. 1 V. Frieman, NW SW NE 29-3s-4w, dry, Menard 557 ft., Glen Dean 670 ft., base Golconda 882 ft., basal Paint Creek 982 ft., Renault 1,037 ft.

White County

East Calvin pool: Harris & Meyers 1 Cox, SW SE SE 5-4s-14w, pumped 50 bbl., 60-qt. shot 2,800-24 ft., Aux Vases 2,798-2,823 ft., old well P.B. from 2,942-2,824 ft.

Buell & Herndon 8 J. Bond, E½ W½ NE 8-4s-14w, flowed 110 bbl., 100-qt. shot 2,798-2,826 ft., Aux Vases sand 2,790-2,826 ft., T.D. 2,829 ft.

Cherry & Kidd 1 Calvin, SW SE NE 8-4s-14w, flowed 230 bbl., 50-qt. shot 2,792-2,824 ft., Aux Vases sand 2,792-2,824 ft., old well deepened from 2,713-2,824 ft.

Delta Drlg. 2 Boltinghouse, SW NE NW 16-4s-14w, pumped 175 bbl., 70-qt. shot 2,834-58 ft., Aux Vases 2,837-52 ft., T.D. 2,861 ft.

W. Duncan 1 Bramlett, NE NE SW SW 17-4s-14w, pumped 488 bbl., natural, Tar Springs 2,264 ft., T.D. 2,289 ft.

Ryan Oil 5 Bramlett-A, NE SE SW 17-4s-14w, dry, Cypress sand 2,584 ft., T.D. 2,604 ft., P.B. 2,592 ft.

Florida Oil 1 Boltinghouse, NW NE SE 9-4s-14w, dry, T.D. 2,965 ft.

North New Harmony pool: Superior 2 J. R. Collins, SE SE NW 33-4s-14w, pumped 127 bbl., perf. 2,682-2,728 ft., 2,563-98 ft., old well worked over, T.D. 2,839 ft.

Superior 10 H. C. Ford-C, SW SW SW 27-4s-14w, pumped 139 bbl., 130-qt. shot 2,697-2,725 ft., Benoist 2,684-2,725 ft., saturated, T.D. 2,725 ft.

Superior 1 H. M. Ford, NW SW SE 28-4s-14w, flowed 790 bbl., 120-qt. shot 2,809-39 ft., Aux Vases 2,803-38 ft., T.D. 2,725 ft.

South New Harmony pool: Benedum-Trees 1 A. Golden, NW NE SE 29-5s-14w, pumped 13 bbl. oil and 26 bbl. water, 20-qt. shot 2,830-32 ft., 40-qt. shot 2,813-24 ft., Benoist 2,816 ft., T.D. 2,844 ft., P.B. 2,830 ft.

Lewis Prod. 1 Morris, SW SE NW 21-5s-14w, dry, Kincaid 1,884 ft., Palestine sand 2,153-70 ft., Menard 2,214 ft., Tar Springs 2,377 ft., Glen Dean 2,463 ft., Golconda 2,565 ft., Barlow 2,690-2,700 ft., Cypress sand 2,738-60 ft., Paint Creek 2,816 ft., Benoist 2,862-2,926 ft., Renault 2,930 ft., Aux Vases sand 2,999-3,006 ft., Ste. Genevieve 3,026 ft., Rosiclare 3,030 ft., T.D. 3,133 ft.

Mill Shoals pool: Texas 6. A. Poorman, E½ NW SE 19-3s-8e, pumped 134 bbl., 25-qt. shot 3,231-56 ft., T.D. 3,260 ft.

Johnson Bros. 3 A. J. Poorman, SW NE SE 19-3s-8e, pumped 110 bbl., 60-qt. shot 3,203-32 ft. Aux Vases 3,203-30 ft., T.D. 3,244 ft.

Storms pool: Skelly 1 Wilson-B, SE NW NW 11-6s-9e pumped 105 bbl. oil and 19 bbl. water, 10-qt. shot 2,274-80 ft., Waltersburg sand 2,269-80 ft., T.D. 2,280 ft.

Williamson County

Wildcat: Adkins 1-D Old Ben Coal, SE SE SE 4-8s-2e, dry, McClosky 2,642 ft., 2,568 ft., 2,695 ft., St. Louis 2,769 ft., T.D. 2,771 ft.

ILLINOIS DRILLING REPORT

Bond County

Thomas Scharf et al 1 Calufotti SE SW NE 27-7n-4w Drilling 320 ft.

Woodruff 1 Harwood.....NE NE SE 36-7n-4w H.F.W. 620 ft., show gas 741 ft., caught fire, S.D. 744 ft.

Clark County

Neal Stewart 1 Wallis.....NW SW SE 8-10n-14w Drilling 520 ft.

Clinton County

B. E. Martin 1 C. Heinzman.....SE SE SE 4-2n-1w S.D. 30 ft.

Hughes 2 Holman.....NE SW SE 10-2n-1w S.D. 1,320 ft.

Wilson 1 Lippert.....NE NE NE 27-2n-1w Rigging up rotary.

J. F. Ashoff 1 Lampen.....NW NW NW 16-1n-2w Bailed 1½ bbl. in 12 hr., filled up 350 ft. oil and 40 ft. water in 10 hr., running casing 1,108 ft.

P. Mosebach 1 Schlarmann.....NE NW NW 9-1n-3w Set 10-in. 96 ft., drilling 1,128 ft.

Clay County

Bradshaw Drlg. 1 Crews Est. ....NE NE NW 9-4n-5e Drilling 1,350 ft.

Crawford County

Cullins 1 M. S. Davis.....NE SW NE 23-7n-13w Salem test, moving in standard tools.

Edwards County

Seaboard 1 Bragham.....SE SE SW 3-1n-14w Menard 2,180 ft., Waltersburg 2,228 ft., Vienna 2,289 ft., Tar Springs 2,295 ft., Glen Dean 2,432 ft., Hardinsburg 2,457 ft., Golconda 2,505 ft., Barlow 2,634 ft., Cypress sand 2,709 ft., Benoist 2,803 ft., Ste. Genevieve 2,981 ft., drilling 3,010 ft.

Noah & Morrison 1 Smith.....NE SW SE 12-2s-10e Menard 2,295 ft., Waltersburg sand 2,367 ft., Glen Dean 2,526 ft., Hardinsburg 2,576 ft., slight show oil 2,650-55 ft., Golconda 2,670 ft., Barlow 2,776-95 ft., drilling 2,900 ft.

Effingham County

Carter 1 N. J. Edwards.....SE NE SE 19-9n14e Running 8-in. 178 ft.

Fayette County

Turner Drlg. 1 Williams.....SW SW NW 6-6n-2e Drilling 175 ft.

J. T. Elmore 1 Keith.....SE NE NW 18-6n-1w Drilling 186 ft.

John Pummill 1 Isbell.....NW NE SW 33-8n-1w T.D. 1,282 ft., pumped water without increasing show of oil.

P. Holleman 1 Kruse.....NE SW NW 36-5n-2e Drilling 125 ft.

Ford County

Nelson et al 1 Erp.....SW NW SE 19-24n-7e Drilling 2,630 ft.

Fulton County

Lee Township Oil 1 Quigle.....SE SW NE 14-7n-1e Drilling 640 ft.

Gallatin County

Seaboard 1 Colnon.....NW NW SE 4-8s-8e T.D. 1,720½ ft., 15-qt. shot 1,713-17 ft., casing collapsed, swedging.

Sun 1 C. W. Patton.....NW NE NE 4-8s-8e Drilling removable pipe.

Hamilton County

D. & P. Oil 1 Zellars.....SW NE SW 26-3s-5e Drilling 3,127 ft.

Jackson County

Barton & Shipman 1 P. Maharry NE NE SE 20-9s-3w S.D. 1,407 ft.

Jasper County

Pure 1 F. J. Ochs-A.....W½ NW SW 23-6n-10e Barlow 2,418 ft., Cypress 2,432 ft., Paint Creek 2,627 ft., Benoist 2,644 ft., drilling 2,650 ft.

Carl Buerkle et al 1 Payne.....SE NE NE 6-5n-10e 10-in. 109 ft., drilling 1,810 ft.

Jefferson County

Regent 1 Luchsinger.....SW NE SE 3-1s-2e S.D. 1,992 ft.

Obering 1 Morgan.....NW SE SW 25-2s-1e Drilling 1,435 ft.

Johnson County

Benedum-Trees 1 Cavitt.....SW SW NW 24-11s-3e Drilling 2,956 ft.

Lawrence County

W. Payne 1 H. Payne.....NW SW NW 20-3n-11w Cleaning out 1,185 ft.

Macoupin County

Adams & Laegers 1 Bristow SW SW SW NW 8-11n-7w Drilling 1,100 ft.

Bridges & Valbert 1 Felker.....NW NE SW 1-9n-7w T.D. 1,250 ft., water 1,180-90 ft., underreaming 5-in. 1,200 ft.

Madison County

Alch & Carroll 1 Rinkel.....SE NE NW 33-5n-6w T.D. 855 ft., underreaming 8-in. 745 ft.

McLean County

Funks Grove Oil & Gas 1 Crawford.....NW NW NW 28-22n-1e Maquoketa 1,833 ft., S.D. 1,940 ft.

Marion County

J. Dunbar 1 Fischner.....SW SW 27-3n-1e S.D. 310 ft.

Randolph County

Oswald et al 1 Wiley.....SW SW SE 14-5n-6w Rigging up standard tools.

J. R. Rankin 1 B. Bierman.....SW SW SE 3-7s-5w Clore 240 ft., Palestine 308 ft., Menard 378 ft., Glen Dean 550 ft., Hardinsburg 605 ft., drilling 730 ft.

Richland County

C. B. Hill 1 Wood.....NE SE SE 21-2n-14w Glen Dean 2,508 ft., Cypress sand 2,770-80 ft., T.D. 3,100 ft., P.B. 2,755 ft., to test Weiler.

Williamson County

Union Mining 1 Henderson.....SW SW NW 10-9s-2e Moving in rotary tools.

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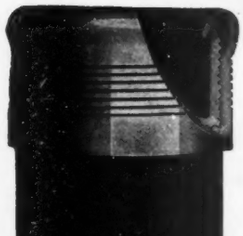

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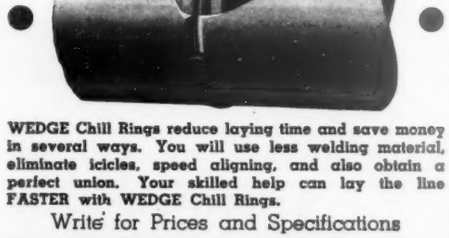

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Upturn of Work Indicated for Many East Texas Fields

By R. MARNE SANFORD

DALLAS, Tex., Mar. 10.—In the wake of somewhat lagging wildcat activity for the Hawkins area as well as the general eastern Texas district, attention was turned the past week to several little-developed fields in widespread areas of eastern Texas. Fields in Camp, Gregg and Henderson counties are all in line for renewed work, either extension activity or proven field development programs.

In Camp County and about 3 miles southeast of Leesburg, a new outpost test has been staked in the Pittsburg field. It is Capt. J. F. Lucey, Dallas, 1 J. F. McKenzie, on a 50-acre tract farmed out from Shell Oil Co., Inc., and located about ¾ mile west of H. S. Moss 1 Venters, discovery well in the S. Wright Survey. The discovery was completed in August of the past year for 84 bbl. daily from saturation in the Pettit lime drilled from 8,000-42 ft. The only activity in the field since the completion of the discovery has been the Gulf 1 Venters, west offset to the Moss well. Gulf has been testing and attempting completion at its test for several weeks, the best and latest gage being 57 bbl. daily, flowing from perforations at 7,932-69 ft. and 8,009-39 ft. Very little formation pressure is present in the field. The new location for the week is in the L. Williams Survey, Shell retaining one-eighth override and contributing $5,000 toward the drilling of the test.

SUMMARY OF COMPLETIONS

East Texas Field

(1-hour gages)

	No.	Bbl.	Footage
Oil: Longview area	4	139	14,659
Kilgore area	5	161	17,936
Joiner area	2	120	7,306
Total	11		39,901

East Central Texas

Oil: Talco field	3	984	12,861
Chapel Hill field	1	123	8,209
Dry: Tehuacanna field	1		2,652
Total	5		23,722

Willow Springs Gas Area

In Gregg County and just southwest of Longview, Humble Oil & Refining Co. is preparing to start a new mile-northwest outpost to the Willow Springs field, while Roger Lacey, the only other operator in the field, is preparing to start a ¾-mile southwest outpost. The field is producing gas and distillate from the Pettit lime of Trinity series at the 7,300-ft. level. Humble and Gulf jointly have three wells in the field, both gas and distillate producers, and Roger Lacy, owner of the Southern Gas Co., a producing and marketing firm furnishing the city of Longview with gas, has two wells in the field. At present the field embraces about 700 acres, however, it is believed the structure covers considerably more area. Humble Oil & Refining Co. will drill 1 W. A. Fisher, 660 ft. south of the center of the north line of the Jacob Lagrone Survey, about a mile northwest of the Humble and Gulf 1 Robertson, discovery well in the extreme western part of the M. Mann Survey.

Roger Lacy's location is 1 Horton-Dickerson, Hudson Survey, ¾ mile southwest of the Humble and Gulf 1 Horton-Dickerson.

Opelika Area

Another deep gas and distillate field is being prepared for new activity as lease unitization continues at the Opelika field in Henderson County, producing from the deep Trinity level. This field was discovered several years ago by Tide Water-Seaboard and after about 1½ years of continued exploration for oil, it was purchased by the Lone Star and Shamrock gas companies as definitely a gas and distillate-producing field. Unitization work has been under way by the new operators in the area for about 10 months, latest reports being that an additional 3,000 acres have been unitized and that very soon a full-scale development program will be launched by the operating companies.

The Lone Star and Shamrock gas companies have a gasoline and recycling plant in the field, Gulf Pipe Line Co. having only recently started purchasing the output. Gulf is contracted to take between 4,000 and 5,000 bbl. of gasoline daily from the 52,000,000-cu.-ft. plant in the field. The gasoline is being moved through a new 4-in. welded pipe line from Opelika to Big Sandy, a distance of about 44 miles, where the gasoline enters Gulf's main carrier to Beaumont on the coast.

Hawkins Field

Two gas producers for the Hawkins field were in prospect at the close of the week as Humble Oil & Refining Co. prepared to complete 1 Dagnell and 1 Bryan, the latter well being one of two Humble operations which last week were regarded as failures. The 1 Dagnell, Parker Survey, is being completed for an estimated 5,000,000 cu. ft. of gas daily from perforations opposite the Woodbine sand from 4,398-4,416 ft. Total depth is 4,515 ft. in the Georgetown lime. The 1 Bryan, a location to the southwest and in the same survey, is bottomed in the Georgetown lime, with plans at present being to complete as a gas well. The company's 1 Williams, Hampton Survey, is bottomed at 4,773 ft. and preparing to resume testing from the Woodbine sand. This well was also last week thought to be a failure.

EAST TEXAS FIELD COMPLETIONS

(1-hr. gages)

Gregg County

Longview area: H. P. Carr 7 Richey, abandoned location.
H. P. Carr 8 Richey, abandoned location.
H. P. Carr 9 Richey, abandoned location.
General Crude Oil 4 fee, 40 bbl., 3,485-89 ft.
Trapp & Blankenship 4 Miles, abandoned location.
Kilgore area: Chaplin & Bass 10 Watson, 46 bbl., 3,582-3,608 ft.
T. D. Humphries 25 Spear, 25 bbl., 3,544-77 ft.
T. D. Humphries 36 Spear, 25 bbl., 3,543-82 ft.
T. D. Humphries 37 Spear, 25 bbl., 3,540-80 ft.
Nioco Oil 13 Knowles, 40 bbl., 3,539-89 ft.

Rusk County

Joiner area: A. G. Fullerton 3 Pinkston, 60 bbl., 3,650-52 ft.
M. H. McMurrey 1 Pinkston, 60 bbl., 3,642-54 ft.

Upshur County

Longview area: R. W. McGee 1 Brawley, dry at 3,772 ft.
Shell 30 Landers, 45 bbl., 3,648-3,740 ft.
Shell 32 Landers, 45 bbl., 3,680-3,735 ft.
Stanolind and Falcon 6-B Everett, 9 bbl., 3,694-95 ft.

EASTERN TEXAS WILDCAT REPORT

Anderson County

Griffith Bros. 1 Clayton, William Frost Sur., Elkhart area, preparing to spud.
R. H. & W. Oil 1 Saunders, 17-acre tract in Joseph Ferguson Sur., in Frankston townsite, top sub-Clarksville 4,874-4,910 ft., fishing 5,225 ft.
Texas 1 Greenwood, M. Salisar Sur., 4 mi. NW Palestine, old hole junked at 2,150 ft., drilling 800 ft.

Camp County

Lucey 1 McKenzie, L. William Sur., ¾ mi. W of Pittsburg field, first report.

Lamar County

Whitehead & Dahl Bros. 1 J. M. Barr, P. Compton Sur., 9 mi. S Paris, location.

Leon County

H. A. Lindsay 1 J. L. White, McKinney & Williams Sur., 1 mi. SE of Buffalo, 10¾-in. at 1,021 ft., T.D. 2,025 ft.

McLennan County

E. P. Campbell 1 Stewart, S. Burton Sur., 5 mi. N of Waco, S.D. 765 ft.
Frank Place 1 Hackney, I. Robbins Sur., 4 mi. SE of McGregor, T.D. 910 ft.

Robertson County

C. C. Baker & Son 1 Middleton, J. S. McNeil Sur., 2 mi. S of Elliott, S.D. 20 ft.
H. A. Clary 1 A. G. Scott, H. F. Thornton Sur., 2 mi. W of Franklin.

Navarro County

Hargrave Oil 1 C. S. West, M. Boren Sur., 1½ mi. S of Richland, T.D. 3,257 ft., salt water.

Rusk County

Delta Drilling Co. 1 Kangera, 113-acre tract in R. Lane Sur., 3 mi. N of Henderson, 8,200-ft. test, drilling 3,800 ft.
Skelly Oil 1 Markey, Nolan Sur., 4 mi. SW of Mount Enterprise, 8,000-ft. test, top Austin 3,352 ft., drilling 6,700 ft.
Beddinghouse 1 J. A. McCreary, H. Huejas Sur., 6 mi. SW of Enterprise, spudding.

Upshur County

Sun Oil 1 W. C. Henderson, NW cor. of 27-acre tract in 100-acre tract in Robinson Asher Sur., just outside town of Ore City, 7,000-ft. test, top Nacatoch 1,815 ft., Pecan Gap 2,320 ft., Blossom 3,090 ft., Georgetown lime 3,784 ft., drilling 5,566 ft.

Wood County

Humble 1 Bryant, 467 ft. from N and W lines of W. Parker Sur., in Hawkins area, top Woodbine 4,215 ft., T.D. 4,495 ft., preparing to complete as gas well.
Humble 1 Williams, 1,400 ft. from S and 467 ft. from W lines B. H. Hamilton Sur., in Hawkins area, top Woodbine 4,223 ft., saturation 4,480-4,580 ft., T.D 4,773 ft., preparing perf. casing in Woodbine to test.
Humble 1 Clift, 106-acre tract in James Pollack Sur., in Hawkins area, rigging up.
Jackson & McGlothlin 1 Moore, 10-acre tract in Joseph Knight Sur., in Crow townsite, Woodbine sand test, moving in material.
Ryan Consolidated Oil and W. C. McGlothlin 1 Goat, William Clark Sur., near Crow, drilling 4,330 ft.

EAST CENTRAL TEXAS COMPLETIONS

(24-hr. gages)

Franklin County

Talco field: B. G. Byars 1 Rutherford, 33 bbl. in 3 hr., 4,238-60 ft.
B. G. Byars 2 Rutherford, 41 bbl. in 3 hr., 4,219-88 ft.
Humble 2 Rutherford, 49 bbl. in 3 hr., 4,306-13 ft.

Limestone County

Tehuacanna field: Zephyr Oil 7 Peeples, dry at 2,652 ft.

Smith County

Chapel Hill field: Sun and Shell 1 Warren, top Woodbine 4,041 ft., Georgetown lime 4,440 ft., Paluxy 5,660 ft., first anhydrite 6,880 ft., massive anhydrite 7,135 ft., perf. casing 8,181-8,209 ft., flowed 123 bbl. in 24 hr., open tubing.

Rocky Mountain Area

(Continued from Page 80)

oil and gas inspector, new rules were promulgated which provided that it is not necessary to cement casing run to less than 100 ft. to shut off surface water in the main part of the field, although that practice will continue on the west side and beyond the rimrock where farm wells might be contaminated if Eagle sand water were not shut off. This action was taken to make the state and federal regulations uniform on this matter, the state not having required the cementing of the surface pipe.

Ohio 6 Carl Lind, SW SE NW 11-35n-2w, pumped 149 bbl. first 24 hours at 1,633 ft., total depth, from the contact at 1,629-30 ft., after acidizing with 1,000 gal.

Ohio 6 Howling ..... SW SW NW 10-35n-2w
Rigging.
Ohio 7 Howling ..... NE NE SE 10-35n-2w
Location.
Dunkirk Adventure 1 McKechnie NW SW SE 2-31n-1w
Drilling 170 ft.
E. Morton 3 Ellingson ..... CNL NE NW 23-35n-3w
Drilling 160 ft.
High Gravity Oil Prod. 1 Govt. SE NW NE 19-35n-3w
T.D. 2,200 ft., P.B. to 2,170 ft., acidized again, no results, standing.
Kevin Oil 4 Leach ..... C SE NE 31-35n-3w
T.D. 1,669 ft., cemented 7-in.
Pfabe & Engleking 13 Govt. CNL SE SE 19-35n-2w
T.D. 1,518 ft., acidized 500 gal., no results, will shoot and acidize again.
Montana Gas 1-X Nelson ..... CSL SE NE 12-35n-1e
Drilling 2,163 ft., close to Cut Bank sand.

NORTHWEST NEW MEXICO

Bernalillo County

David H. Boyd 1 Wright 11-10n-5e
Spudded to 55 ft. and S.D.

San Miguel County

Southwest Drilling, Inc. 1 Conchas NW NE 34-17n-21e
T.D. 2,735 ft., recemented 8-in. at 2,635 ft.

San Juan County

Carroll & Carroll 2 Government C NW NW 12-29n-12w
Drilling 1,440 ft.
Red Cactus Oil 1 Tribal ..... SE SE SE 35-29n-18w
Drilling 1,150 ft.

Torrance County

Cardinal Oil Co. 1 State ..... SE SW 3-8n-14e
S.D. 100 ft. (correction) for casing.
Orville J. Lee 1 Milburn ..... C NW SW 36-7n-7e
Drilling 511 ft.
J. P. Stewart 1 Laman ..... C NW NE 3-3n-12e
T.D. 776 ft., skidded rig, drilling 100 ft. in new hole.

UTAH

Box Elder County

Northern Oil 1 ..... NE SW 17-13n-4w
Resumed at 386 ft., and drilling ahead at 475 ft.

Summit County

Longwell Petroleum Co. 1 ..... SE SW SE 35-3n-5e
Drilling 3,645 ft.

Two Wells Extend Abell Field North; Third Defines West

By R. MARNE SANFORD

MIDLAND, Tex., Mar. 10.—Final outcome of three long-testing wildcats in the Abell field of northern Pecos County was known at the close of the week. Two of the tests have been completed to extend the field to the north, while the other is drilling deeper after defining the western limits of the field when salt water was found in the regular Simpson sand pay of the discovery well.

Only ¼ mile north and slightly west of the discovery well, Magnolia 1 Markey, Lot 2, Section 4½, Block 3, H.&T.C. Survey, was officially completed for 504 bbl. of oil daily, naturally, gage being based on the last 3 hours of a 6-hour flow. The flow was through 2-in. tubing with a ¼-in. flowing choke. The gas-oil ratio was set at 208-1.

Production is from Simpson sand from 5,396 to 5,400 ft., total depth. Early the past week the well had flowed 1,750 bbl. in 19½ hours on preliminary gages.

One and a half miles north of the discovery well in the field, Magnolia 1 State-Baldwin, Section 24, Block 9, H.&G.N. Survey, was gaged at 64 bbl. daily, also based on the last 3 hours of a 6-hour flow. The flow was through ⅛-in. tubing choke with a gas-oil ratio of 220-1. This producer is bottomed at 5,220 ft. in the Simpson sand. The apparent small initial production of the well is partially explained by the fact that only ¼ mile to the southwest is the old Magnolia and Tex-Mex Oil 1-A McKee, one of the early failures drilled in the field.

To define the Abell field on the west side, Magnolia 1 State-Sharp, Section 22, Block 9, H.&G.N. Survey, about ¾ mile northwest of the 1 Markey, is drilling ahead below 5,524 ft. in an unreported formation. This outpost tested only salt water through casing perforations opposite the regular Simpson sand pay of the field.

Indicating continued development of the major companies in this deep field, new locations were announced the past week by both Magnolia and Sinclair Prairie. The former company will drill 1-B Markey, spotted 1,925 ft. southwest of the 1 Markey, and located in Lot 2, Section 4½, Block 3, H.&T.C. Survey. Sinclair Prairie will drill 1 Rosa R. Daley, located 330 ft. from the south and west lines of Lot 7, Section 4½, Block 3, H.&T.C. Survey, about ½ mile north of the discovery well and about ¼ mile north of Magnolia's new completion on the Markey tract.

SUMMARY OF COMPLETIONS

	No.	Bbl.	Footage
Southern West Texas			
Oil: Noelke field	1	19,890	1,130
North Cowden field	3	2,598	13,310
Goldsmith field	3	4,013	12,724
Other fields	6	2,440	18,403
Gas: Wildcat discovery	1	*2.0	1,252
Dry: Wildcats	1	.....	1,909
Total	15	.....	48,728
Northern West Texas			
Oil: Seminole field	4	2,102	21,139
Slaughter field	4	4,401	19,959
Wasson field	9	7,883	46,494
Dodge field	1	288	2,868
Total	18	.....	90,460
Texas Panhandle			
Oil wells: Carson County	2	397	5,216
Gray County	3	399	9,203
Hutchinson County	4	821	12,052
Gas wells: Wheeler County	1	*59.2	2,543
Total	10	.....	29,014
Southeast New Mexico			
Oil wells: Maljamar field	4	925	15,783
Root field	2	145	5,355
Dry holes: Fields	1	.....	460
Wildcat	1	.....	1,303
Total	8	.....	22,901

*Million cu. ft.

North Cowden Field Is Extended

The North Cowden field of Ector County, already a part of one of the longest trend fields in West Texas, has been given a new 1¼-mile north extension across the county line into Andrews County. North Cowden is a part of the chain of fields including Johnson, Foster and Addis, a continuous length of about 21 miles. The extension is Atlantic and Sun 2-B O. B. Holt, Jr., SE SW Section 7, Block 43, Township 1n, T.&P. Survey, 1½ miles north of regular production in the field and about 1¼ miles east of the same operators' 1-B Holt, in Section 6 of the same block and survey. The new prospective extension made 111 bbl. of fluid in 8 hours, 6 per cent being basic sediment and water. It logged first porosity at 4,456 ft. and cored streaks of oil lime and sand to a total depth of 4,520 ft. The pay level has been shot with 540 qt. and another shot is contemplated.

In southern Ector County Forest Development Corp. will make another attempt to extend its one-well Duro field. The firm opened the field with 1 Bradley, Section 18, Block 43, Township 3s, T.&P. Survey, in October 1940 with a daily flow of 102 bbl. from 4,230-4,362 ft. A short time after the discovery, the first failure was drilled by the firm at 1 Edwards, Section 30, 2 miles south. The new attempt to extend the field will be at 1-C Edwards, SE SW Section 20, same block and survey. The location is about 1½ miles southeast of the discovery and is also ¾ mile south of a 4,189-ft. failure in the extreme northeast corner of the section. This failure, however, did not reach the pay level found in the discovery well.

SOUTHERN WEST TEXAS COMPLETIONS

(24-hr. ratings based on last 3 hr. of 6-hr. gage)

Crockett County

Wildcat: I. T. I. O. 1 Henderson, NW SE Sec. 33, Blk. S.T., dry at 1,909 ft.
Noelke field: Soma Oil & Gas 2 Noelke, 19,890 bbl., 1,127-30 ft., based on 3-hr. flow of 2,486 bbl.

Ector County

Johnson field: Atlantic 1-H Johnson, 553 bbl., ½-in. choke, 4,084-4,150 ft.
Continental 5-B Johnson, 146 bbl., open tubing, 495-qt. shot, 4,170-4,300 ft.
North Cowden field: Carl B. King 2-B Holt, 510 bbl., open tubing, 120-qt. shot, 4,359-4,414 ft.
M.B.K. Drilling Co. 5-A Gist, 1,134 bbl., open casing, 510-qt. shot, 4,194-4,335 ft.
Texas Pacific Coal & Oil 8 Holt, 954 bbl., open tubing, 530-qt. shot, 4,420-4,561 ft.
Jordan field: Snowden & McSweeney 6 University, 822 bbl., 1,000 gal. acid, 3,580-3,600 ft.
Foster field: Forest Development 3-A Moss, 451 bbl., open tubing, 530-qt. shot, 4,130-4,347 ft.
Goldsmith field: Gulf 339 Goldsmith, 913 bbl., naturally, open tubing, 4,159-4,249 ft.
Gulf 340 Goldsmith, 1,133 bbl., naturally, 4,168-4,238 ft.
Gulf 341 Goldsmith, 1,967 bbl., 4,000 gal. acid, 4,177-4,237 ft.

Menard County

Wildcat discovery: Harry Baldwin 1 Leggett, SW SW Sec. 1, B.S.&F. Sur., 2,000,000 cu. ft. gas daily, 1,250-52 ft.

Pecos County

Tobarg field: Cardinal Oil 61-E Tippett, 9 bbl., pumping, 469-76 ft.
Fromme field: W. H. Street 5 Fromme, dry, 1,923 ft.

Ward County

South Magnolia-Sealy field: Magnolia 6-41 Sealy, 160 bbl. oil plus 25 per cent water, 45/64-in. choke, 500 gal. acid, 2,900-05 ft.
O'Brien field: Gulf 154 O'Brien, 445 bbl., open casing, 730-qt. shot, 2,540-2,775 ft.

SOUTHERN WEST TEXAS WILDCAT REPORT

Crane County

Gulf 1-F University, SE SE Sec. 22, Blk. 31, University Sur., coring 9,870 ft.
Gulf 17 Waddell, Sec. 13, Blk. 3, H.&T.C. Sur., 4 mi. S of Sand Hills field, drilling 5,545 ft.
Eastham & Russell 1 McClintic, NE NE Sec. 210, Blk. F, C.C.S.D.&R.G.N.G. Sur., drilling 2,603 ft.

Crockett County

George T. Morris 1 Brock Hoover, SW SE Sec. 99, Blk. 1, I.&G.N. Sur., 2,000-ft. test, drilling 9,577 ft.

Culberson County

Cecil Cothrun 1 Casey-Rounseville, Sec. 7, Blk. 104, P.S.L. Sur., drilling 1,340 ft., last report.

Ector County

Cities Service 1 F. V. Addis, SW SE Sec. 34, Blk. 43, Twp. 2s, T.&P. Sur., T.D. 5,156 ft., hole 10° off vertical, P.B. 4,795 ft., drilling in new hole at 5,300 ft.

Loving County

H. C. McAuley 1 E. Hall, SE Sec. 60, Blk. 7, W.&N.W. Sur., S.D. 3,852 ft.
Sloan & Zook 1 T.&P. Trust, SW SE Sec. 37, Blk. 56, Twp. 1s, T.&P. Sur., 3¾ mi. NE of Tunstill gas well, preparing to quit as failure, 3,904 ft.
Pinal Dome Oil 1 Michigan Oil fee, NW SW Sec. 15, Blk. 26-C, P.S.L. Sur., 5,300-ft. test, drilling 815 ft.

Pecos County

Culbertson & Irwin 1 R. G. Heiner, NE NE Sec. 589, G.C.S.F. Sur., Ordovician wildcat, show oil in upper Ellenburger lime, show oil 5,382-90 ft. and 5,500-10 ft., T.D. 5,665 ft., P.B. 5,509 ft., flowed 36 bbl. oil per day for 3 days, still testing.
Stanolind 1 Conry-Davis, SW SW SW Sec. 31, Blk. 9, H.&G.N. Sur., Ordovician test in Abell area, drilling 800 ft.
O'Quinn 2 O'Neil, S½ Sec. 74, Blk. 10, H.&G.N. Sur., Ordovician test, location.
Sinclair Prairie 1 Grove, Lot 9, Sec. 26, Blk. 9, H.&G.N. Sur., Ordovician test, location.
Richards 1 Robbins, NW NW Sec. 68, Blk. 10, H.&G.N. Sur., first report.

Schleicher County

Harold B. Opp 1 Jackson, Sec. 41, Blk. LL, T.C. Sur., T.D. 6,155 ft., fishing tools.

Reagan County

H. Schooler 1 R. A. Wolters, NE NE Sec. 51, G.C.&S.F. Sur., S.D. for 8-in. casing at 975 ft.

Reeves County

C. A. Kitsos 1 A. B. Burchard, SW Sec. 7, Blk. 58, P.S.L. Sur., Delaware test, drilling 130 ft.
Roy Johnson 1 Perkins, Sec. 18, Blk. 7-C, P.S.L. Sur., S.D. 3,355 ft.
J. T. Pemberton 1 fee, NE NE Sec. 2, Blk. 55, Twp. 7, T.&P. Sur., Delaware lime test, 7,500 ft., preparing to start.

Sutton County

S. B. Roberts 1 George Allison, NW NE Sec. 44, Blk. K, G.H.&S.A. Sur., S.D. 740 ft., casing.
Domain 1 G. S. Allison, SW NE Sec. 91, Blk. 9, T.W. N.G. Sur., Ellenburger lime test, S.D. 1,098 ft.

Terrell County

Texas Consolidated Oil 1 Holmes, NE NE Sec. 14, Blk. 2-A, G.H.&S.A. Sur., 3,600-ft. test, 10-in. 1,100 ft., T.D. 1,275 ft., preparing to start up.
H. H. Sides 1 Rose, Sec. 15, Blk. 148, T.&St.L. Sur., S.D. 625 ft.
E. M. Thomasson 3 Bates-Graham, 660 ft. from N and 2,490 ft. from W lines, Sec. 30, Blk. 1, I.&G.N. Sur., S.D. 950 ft.

Upton County

H. C. Wheeler 1 Kincaid, 2,173 ft. from N, 467 ft. from E lines, Sec. 1, G.C.&S.F. Sur., location.
Pittman & Atkins 1 Fowler-Starnes, NW NE Sec. 89, G.C.&S.F. Sur., 3,500-ft. test, spudded.

Ward County

Fitzpatrick & Slack 1 Wilson, Sec. 145, Blk. 34, H.& T.C. Sur., 1½ mi. SE of discovery well, T.D. 4,925 ft., S.D. for casing.
Gulf 6 Wristen, 1,997 ft. from SE and 1,989 ft. from NE lines, Sec. 18, Blk. 5, H.&T.C. Sur., deep Silurian test, saturation 3,860-80 ft. and 3,900-20 ft., cemented 7-in. at 3,832 ft., drilling 5,074 ft.
Roeser & Pendleton, Inc., and Merry Bros. & Perini 1 Bird Hayes, 467 ft. from SE and SW lines, Sec. 164, Blk. 34, H.&T.C. Sur., ¼ mi. N of discovery gas well, top saturation in Delaware sand 5,089 ft., T.D. 5,396 ft., P.B. 5,130 ft., shot 5,085-5,130 ft., hole bridged, cleaning out.
J. E. Fitzpatrick 1 T. B. Pruit, SW SW Sec. 23, Blk. 1, W.&N.W. Sur., S.D. 140 ft.

Winkler County

Stanolind and Westbrook 1 Maracaibo, NW NW Sec. 19, Blk. 26, P.S.L. Sur., 2½ mi. NW of Hendricks field, P.B. 2,722 ft., set whipstock, twisted off D.S. in drilling out, P.B. to 1,600 ft. and set another whipstock.

NORTHERN WEST TEXAS

Continued wildcat and field extension exploration was foreseen for the northern Permian basin as new blocks of acreage were reported in several counties and several deals were pending or completed on other fields.

Prospects of a new wildcat test in southern Martin County were seen when Hyde and Wiggins leased a 20,000-acre block along the Martin and Midland County line. Acreage was out of the old Jim Nail ranch, now owned by Stimson & Burleigh. Although no drilling obligation was assumed in the transaction, the oper-

ators are reported contemplating a wildcat test some place on the block. The bulk of the acreage taken is in Block 38, Township 1s, and in Block 38, Township 1n, T.&P. Survey.

A new drilling program for the Roberts area on the extreme western edge of the Wasson field of Yoakum County was seen when Drilling & Exploration Co. obtained farmouts on some 2,300 acres from both Shell Oil Co., Inc., and from Humble Oil & Refining Co. From the Shell company scattered tracts were obtained out of Sections 771, 793, 834, 858 and on the southeast end of the Bennett area, Section 743. From the Humble firm tracts were obtained in Sections 835, 836 and 857, the latter being about a mile from present proven production. All of the other tracts are considered proven.

Possibility of a deeper test on the south end of the Cedar Lake field of Gaines County was seen as San Andres Production Co. sought backing toward the deepening of a recent failure. The test was 1 Sun-Johnson, NW cor. Section 6, a mile south of production in the field. It was dry in going to 5,000 ft., but the new plans are to carry it to the 8,000-ft. level.

NORTHERN WEST TEXAS COMPLETIONS

(24-hr. ratings based on last 3 hr. of 6-hr. gage)

Gaines County

Wasson field: Continental and Carter 8-44 Moore-Langdon, 1,005 bbl., ¾-in. choke, 10,000 gal. acid, 4,880-5,040 ft.
Seminole field: Humble 1 McMurtrey, 681 bbl., ½-in. choke, 1,000 gal. acid, 5,090-5,305 ft.
Magnolia and Atlantic 9-195 H. & J., 410 bbl., ½-in. choke, 4,500 gal. acid, 5,139-5,239 ft.
Magnolia and Atlantic 7-217 H. & J., 378 bbl., ½-in. choke, naturally, 5,203-5,312 ft.
Ohio Oil 6 Tippett, 633 bbl., ½-in. choke, naturally, 5,107-5,283 ft.

Hockley County

Slaughter field: Honolulu Oil 2 Frazier, 1,142 bbl., 2-in. casing outlet, 7,500 gal. acid, 4,960-5,019 ft.
Honolulu Oil 9-78 Slaughter, 1,635 bbl., 2-in. casing outlet, 7,500 gal. acid, 4,920-95 ft.
S. W. Richardson 5-B Slaughter, 807 bbl., 2-in. casing outlet, 10,000 gal. acid, 4,880-4,980 ft.
Skelly 1 McRae, 817 bbl., 3-in. casing outlet, 9,000 gal. acid, 4,850-4,965 ft.

Howard County

Dodge field: F. H. E. Oil 4 Dodge, 288 bbl., pumping, 2,000 gal. acid and 460-qt. shot, 2,552-2,868 ft.

Yoakum County

Wasson field: Aloco Oil 11-B Miller, 1,403 bbl., open tubing, 10,000 gal. acid, 5,009-5,210 ft.
Aloco Oil 11-A Willard, 673 bbl., 48/64-in. choke, 10,000 gal. acid, 4,920-5,212 ft.
Basin States Oil 5 Jordan, 616 bbl., ½-in. choke, 11,000 gal. acid, 4,990-5,270 ft.
Continental Oil 7 Stevens, 822 bbl., open tubing, 12,000 gal. acid, 4,950-5,073 ft.
Denver Producing & Ref. 13-A Whittenburg, 994 bbl., open tubing, 10,000 gal. acid, 4,850-5,125 ft.
Magnolia 25 Mahoney, 519 bbl., 40/64-in. choke, 9,000 gal. acid, 5,036-5,185 ft.
Oil Development Co. 1-743 fee, 378 bbl., ⅞-in. choke, 10,000 gal. acid, 5,050-5,195 ft.
Shell 12-B Baumgart, 1,473 bbl., open tubing, 10,000 gal. acid, 4,935-5,184 ft.

NORTHERN WEST TEXAS WILDCAT REPORT

Andrews County

Phillips 1 University-Drews, NW NE Sec. 32, Blk. 10, University Lands Sur., drilling 6,095 ft.
Furham Pet. 1 Lockhart-Brown, Sec. 24, Blk. 42-A, P.S.L. Sur., top solid lime 4,155 ft., T.D. 5,600 ft., P.B. 4,558 ft., treated 1,000 gal. acid, S.D.

Cochran County

Rhodes and Atlantic 1 Dean, C NE Tr. 4, Lge. 89, Lipscomb P.S.L., T.D. 5,150 ft., P.B. 5,112 ft., treated with 1,000 gal. acid, 210-qt. shot, P.B. to 5,099 ft., retreated 5,000 gal. acid, testing on pump, making 4 bbl. oil in 8 hr.
George Livermore 1 Wright, old well drilling deeper, old T.D. 4,997 ft., contracted to Ordovician, drilling 6,134 ft.

Gaines County

Amon G. Carter 4-D Wasson, NW SE Sec. 50, Blk. AX, P.S.L. Sur., logged new pay about 6,610 ft., tight well, application filed to drill to 11,000 ft., S.D. 10,078 ft. (corrected).

Hockley County

Magnolia 1 M. Wilson, SW cor. Labor 8, Lge. 41, Maverick C.S.L. Sur., 1½ mi. N of production in Slaughter field, drilling 4,440 ft.

King County

J. B. Cunningham 1 F. W. Thormann, NE NE W. C. Browder Sur., S.D. 2,303 ft.

Lubbock County

A. L. Henderson 1 W. D. McMillan, SE NW Sec. 4, Blk. 2-D, H.E.&W.T. Sur., location.

Martin County

Magnolia 1 N. D. Teague, NW NW Lab. 10, Lge. 260, Borden C.S.L. Sur., 5,500-ft. test, 8⅝-in. casing 2,850 ft., drilling 4,352 ft.

Mitchell County

Peck & Croft 1 Jack Smith, 2,173 ft. from N and W lines, Sec. 19, Blk. 26, T.&P. Sur., T.D. 2,400 ft.
C. E. Casebolt 1 J. E. Franklin, NE NE NW Sec. 50, Blk. 27, T.&P. Sur., S.D. 55 ft., repairs.

Yoakum County

George Livermore 1 Ownby, NE NE NE Sec. 502, Blk. D, Gibson Sur., drilled broken saturation 5,237-85 ft., flowed several heads oil, treated 3,500 gal. acid,

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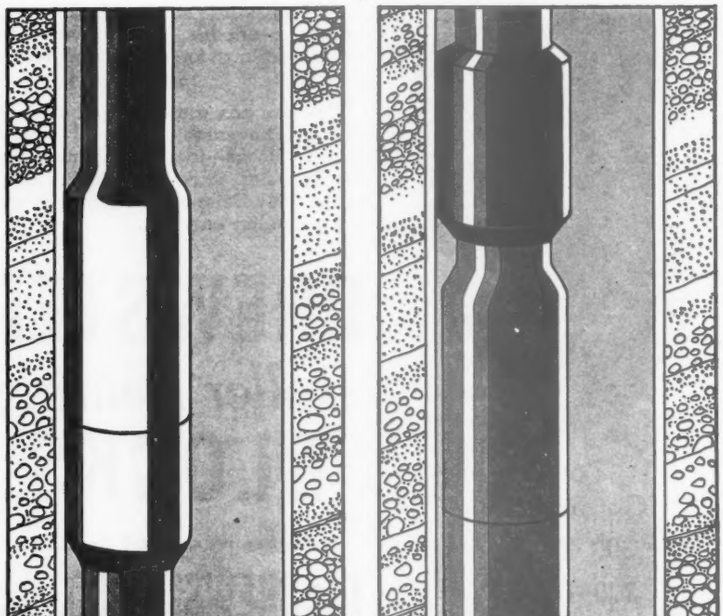

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HERE'S REPORT OF ONE PROMINENT OPERATOR

One operator who has drilled a total of 525,000 feet of hole with the aid of Patterson-Ballagh Protectors reports: "no leaks in casing; never a whipped-off joint of surface pipe; Protector string has never parted; never had a twist-off inside the casing; never had a fishing job caused by Protectors; and never had a bent joint of drill pipe inside the protected area."

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Increase life of drilling string.
Fewer fishing jobs and twist-offs.
Increase speed in drilling.
Life of casing increased.

See Composite Catalog

PATTERSON-BALLAGH
CORPORATION

Los Angeles Houston New York City

flowed 21 bbl. in 3 hr., prepare to re-treat with 6,000 gal., T.D. 5,294 ft., moving in cable tools to deepen.

TEXAS PANHANDLE

AMARILLO, Tex., Mar. 10.—New locations in the Texas Panhandle field for another week ran above normal with a total of 17 being staked in the district. Of this number 10 were in Hutchinson County, two each in Carson, Gray and Moore counties, and one in Wheeler County.

Completions for the week totaled nine oil wells and one gas well. The completions were four in Hutchinson County, three in Gray County, two in Carson County and one gas well in Moore County.

TEXAS PANHANDLE COMPLETIONS

(24-hr. pumping gages)

Carson County

Magnolia 99 fee (244), 51 bbl., 155-qt. shot, 3,094-3,128 ft.
Skelly 114 Schaffer, 346 bbl., 540-qt. shot from 3,047-88 ft. and 95-qt. shot from 3,050-88 ft., T.D. 3,088 ft.

Gray County

Adams & McGaha 9 Morse, 95 bbl., 920-qt. shot, 2,454-2,558 ft.
Dolomite Prod. 1 Johnson, 129 bbl., 200-qt. shot, 3,274-3,320 ft.
Stanolind 11 Waggoner, 175 bbl., 440-qt. shot, 3,170-3,325 ft.

Hutchinson County

Cree & Hoover 7 Harvey, 97 bbl., 285-qt. shot, 2,995-3,050 ft.
Phillips 53 Cockrell, 271 bbl., 260-qt. shot, 2,850-2,920 ft.
Shell 13 Harvey, 225 bbl., 165-qt. shot, 2,995-3,052 ft.
Texas 14 Garner, 228 bbl., 295-qt. shot, 2,925-3,030 ft.

Moore County

Red River Gas 4 Shelton A, 59,200,000 cu. ft. gas, 10,000 gal. acid, pay from 2,315-2,480 ft., T.D. 2,543 ft.

SOUTHEAST NEW MEXICO

HOBBS, N. M., Mar. 10.—A new 7,000,000-cu. ft. per day gas discovery west of the Getty field in Eddy County held the attention in Southeast New Mexico the past week. The discovery is W. A. Suddreth and associates 1 Neil Wills, 1,980 ft. from the south and east lines of Section 13-20-28. It was correlated some 90 ft. high on the top of the lime, and maintained this structural position on the top of the Yates sand at 695 ft. First gas was found at 757 ft. with the main gas volume blowing out from 778-83 ft., total depth. At last reports 8-in. casing was being cemented on shoulder at 638 ft. and it will be drilled ahead to the prospective oil zone at about 1,000 ft.

A wildcat failure in Eddy County was Olen F. Featherstone 1 Merchant, west of Lake McMillan. It quit at 1,303 ft. in lime after finding no shows of oil or gas. Location was 660 ft. from the north and 1,980 ft. from the west lines of Section 10-19-26.

SOUTHEAST NEW MEXICO COMPLETIONS

Eddy County

Wildcat: O. E. Featherstone 1 Merchant, NE NW 10-19-26, dry at total depth of 1,303 ft.
Red Lakes field: Ajax Drilling Co. 1-B Saunders, SW SW 13-17-27, dry at total depth of 460 ft.
Root field: J. H. Elder & Son 1 Root, flowed 125 bbl. daily, open tubing, 300-qt. shot, 2,608-2,729 ft.
Tallmadge & Crowell 2 State, flowed 20 bbl. daily, open tubing, 100-qt. shot, 2,475-2,626 ft.

Lea County

Maljamar field: Barney Cookburn 1-B Miller, SW NW 23-17-32, flowed 250 bbl. daily, open tubing, 140-qt. shot, 3,707-70 ft.
Carper Drilling Co. 2-B Simon, SW NE 30-17-32, flowed 250 bbl. daily, open tubing, 120-qt. shot, 3,683-3,712 ft.
Carper Drilling Co. 5-N Simon, NE SE 29-17-32, flowed 125 bbl. daily, open tubing, 100-qt. shot, 3,841-92 ft., 4,250 ft., T.D.
Barney Cockburn 5-A Pearsall, NW NE 33-17-32, flowed 300 bbl. daily, open tubing, 322-qt. shot, 3,980-4,051 ft.

SOUTHEAST NEW MEXICO WILDCAT REPORT

Chaves County

L. E. Elliott 1 State ..... NW NE 16-11-31
Top anhydrite high at 1,206 ft., drilling 1,310 ft.
Roxana Oil 1 Maull ..... NE NW 11-12-25
Setting 8¼-in. at 624 ft., last report.
A. F. Pierce 1 Franks ..... SE NW NW 17-9-5
T.D. 990 ft., P.B. 887 ft., shot 40 qt. 864-87 ft., testing.
Holmes-Martin 1 Stephens ..... C NW NE 22-15-29
Old well drilling deeper, T.D. 3,210 ft.
H. Steinberger 1 Headley ..... NW SW 26-14s-29e
T.D. 3,405 ft., sulfur water 3,400-5 ft.
R. T. Wilson 1 L. B. Brown ..... C NW SW 29-11-23
Drilling 890 ft.

Eddy County

Harry W. Long 1 Anderson ..... N½ 16-22-20
First report.
G. M. Cone 1 Hare ..... NW NW NE 11-16-28
Old well drilling deeper, T.D. 1,830 ft., showing est. 250,000 cu. ft. daily, testing.
Mac T. Anderson 1 Brainard ..... NE NE 28-18-27
T.D. 2,415 ft., last report.
Jack Harris 1 Josey ..... SW SE 19-20-23
T.D. 643 ft.
Jones & Yates 1 Everest ..... NE SE 15-18-26
270-qt. shot 1,934-84 ft., and 670-qt. shot 1,485-1,710 ft., set new casing, still testing.

North Louisiana, Arkansas

(Continued from Page 65)

Cotton Valley—Webster Parish

Magnolia 1 Pruitt ..... SE SE 7-21-9 202 bbl., condensate, ⅛-in. choke, T.P. 1,650 lb., C.P. 1,800 lb., T.D. 8,634 ft., 7-in. casing 8,634 ft., perf., Bodcaw sand 8,619-22 ft.

NORTH LOUISIANA FIRST REPORTS

Catahoula Parish

H. L. Hunt 1 Southern Kraft ..... SE SE 19-10-6e First report.

Concordia Parish

K. Hughes 1 Nelson ..... SE SW SE 34-9-10e First report.

Natchitoches Parish

C. P. Johnson 1 Lacaze ..... SE SE 63-6n-4w First report.

Bienville Parish

R. W. Burnett 1 Locke ..... NE NW NE 9-15-10 S.D. 1,143 ft.

Bossier Parish

R. L. Reese 1-A Bellevue Ld. Co. .. SW NE SW 27-20-11 Set 5½-in. casing 2,910 ft., testing, T.D. 3,007 ft.

La Salle Parish

Big West Drlg. Co. 1 Whatley ..... NE NE 25-8-2e T.D. 3,560 ft., report show oil 3,124-32 ft., Wilcox, arranging to run casing.

J. D. Critchett et al 1 Jones ..... NW NW 41-7-3e S.D. 3,963 ft.

Lion Oil Ref. Co. 1 Goodpine ..... SW SW 25-9-1e 7-in. casing 1,671 ft., top Wilcox, perf. 1,642-44 ft., dry, reperf. 1,644-46 ft., show oil, reperf. 1,645-48 ft., swabbing and flowing est. 20 bbl., T.D. 1,671 ft., testing.

Placid Oil Co. 1-B Goodpine ..... NE NW 33-9-2e 5-in. casing 3,980 ft., T.D. 4,069 ft., perf. 3,580-86 ft., tested salt water, slight show gas, squeezed, reperf. 3,576-81 ft., tested small show oil and salt water.

Placid Oil Co. 1 Tremont Lbr. Co. .... NW SE 23-9-2e Coring 2,717 ft., Wilcox.

Natchitoches Parish

J. E. Watts 1 Tanner ..... SW SW NW 18-10-10 Pumping 200 bbl. fluid, 95 per cent salt water, T.D. 3,213 ft., old T.D. 3,430 ft.

Sabine Parish

Plummer & McDanield 1 Phares .. NW NW SW 4-5-12 S.D. 98 ft.

Roy Raines 1 Carter ..... SW NW NW 27-9-11 S.D. 2,403 ft.

ARKANSAS

Outstanding development in South Arkansas this week was the discovery of oil in the Smackover lime at McKamie. The field, discovered last June, was recently classified as a gas field on the basis of experiments carried out on its production, proving the gas-condensate recovered at the surface was in the gas-distillate gas phase in the reservoir. Following the issuing of a 160-acre spacing rule for the field, and staking of two locations on that pattern, the Barnsdall Oil Co., drilling 1 R. R. Cornelius on a 40-acre unit staked before the wider spacing was effective, came in making what is considered to be a mixture of oil and condensate. The liquid is much darker than the field condensate, and has a gravity of about 47°, as contrasted with 60-gravity distillate heretofore produced in the first three wells in the field.

Barnsdall Oil Co. encountered the top of the Smackover formation at 9,167 ft., and found main porosity in the oolitic Reynolds member at 9,243 ft. A string of 5½-in. casing was set at 9,362 ft. and perforations were shot in a lower porous zone at 9,347-62 ft. A drill-stem test of the perforated section with packer at 9,300 ft. failed when the seat did not hold, and operators came up the hole and perforated at 9,295-9,328 ft. without squeezing or packing off the lower perforations. The well came in making the 47-gravity liquid and was then shut in. There is a possibility that the operators may set a packer between the two perforated zones to determine whether they are now getting a mixture of oil and condensate and if so to locate the oil section. The strike complicates the problem of setting spacing requirements so that the field may be economically and rapidly developed to facilitate in turn a production plan which will conserve condensate in the gaseous phase in the reservoir.

Union Test

C. H. Murphy 1-C Cates proved disappointing this week as an oil show in what is termed the Jones sand proved noncommercial. The deep El Dorado field test has 7-in. casing set at 7,642 ft. Last week casing was perforated at 7,583-89 ft. and a drill-stem test using a packer at 7,566 ft. showed no pressure and recovered 10 stands of mud cut with oil, and 2 stands of wash water in 1 hour. Operator went in and swabbed seven times, recovering 95 per cent salt water and 5 per cent oil. A retainer was set at 7,003 ft. and the perforations were squeezed and higher perforations shot at 6,955-61 ft. The operator was drill-stem testing the upper horizon at latest reports.

ARKANSAS COMPLETIONS

Atlanta—Columbia County

G. S. Hammond 1 D. D. Goode ..... SE NW 16-18-19 720 bbl., 12/64-in. choke, T.P. 1,550 lb., T.D. 8,297 ft., 5½-in. casing 8,279 ft., perf. 8,253-60 ft., Smackover lime.

Buckner—Lafayette County

J. W. Love 1 J. Waters unit ..... NE NE 13-16-23 312 bbl., gas lift, T.D. 7,267 ft., 5½-in. casing 7,241 ft., Smackover lime.

Wildcat—Nevada County

Coker & Grieves 2 Guy Thompson .. SE SE 35-10-22 Dry, T.D. 1,407 ft.

Nick Springs—Union County

Fohs Oil Co. 2 Dunbar ..... NW NE SW 31-17-14 300 bbl., ¼-in. choke, T.P. 220 lb., T.D. 3,793 ft., 5½-in. casing 3,786 ft., perf. 3,745-49 ft.

Smackover—Union County

J. D. Reynolds 2 Laney heirs .... SW NE NW 8-16-16 T.D. 2,694 ft., 5½-in. casing 2,693 ft., 700 bbl., pumped, 90 per cent salt water.

ARKANSAS DRILLING REPORT

Lonoke County

J. F. Russell 1 J. R. Gunter ..... SE SE 17-5n-10w T.D. 2,808 ft., S.D., reported show oil.

Miller County

Louark 1 E. J. Hedrick ..... SE NE 27-19s-27w Drilling sand 4,973 ft.

St. Francis County

U. S. Oil Corp. 1 Wilford ..... NE SE NE 29-4n-1w T.D. 2,265 ft., testing.

Union County

C. H. Murphy 1-C Cates ..... NW SW 33-18-15 Perf. 6,955-61 ft., testing, T.D. 7,820 ft.

EAST TEXAS BORDER DRILLING REPORT

Marion County

D. L. Butler et al 1 Bailey, R. Maxwell Sur., drilling 3,315 ft., show oil 2,525 ft.

A. J. Vestal et al 1 C. Moseley, D. Lane Sur., rigging up and S.D.

P. L. Withers et al 1 T. G. Allen, Robert Potter Sur., S.D. 2,366 ft.

Sabine County

Sturm & Womack 1-A Keith, L. Grace Sur., S.D. 3,220 ft.

San Augustine County

B. F. Findley et al 1 G. W. Allen, A. N. Davis Sur., S.D. 450 ft.

Roper & Todd 1 Long Bell Lumber Co., N. Hayden Sur.

Shelby County

Cougar Oil Co. 1 Jones, John Latham Sur., S.D. 2,509 ft.

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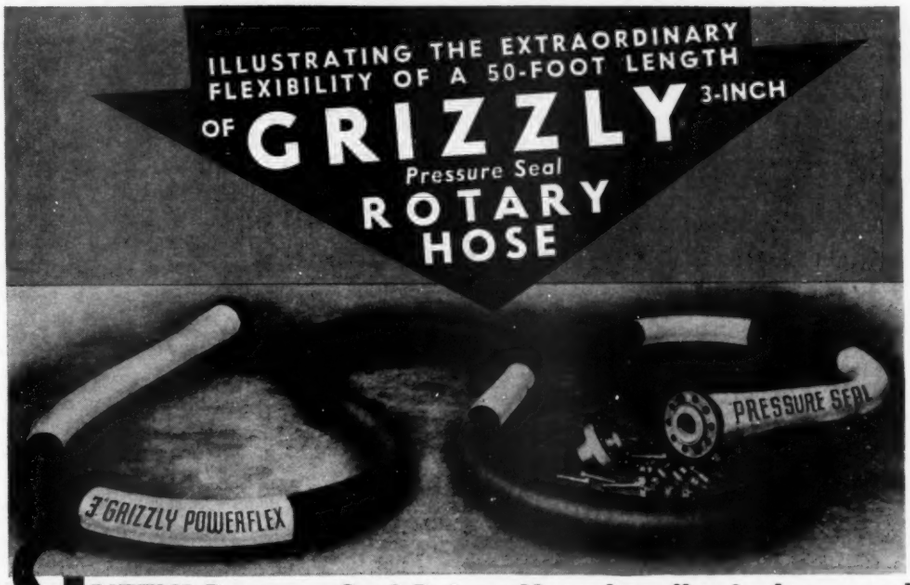
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GRIZZLY
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Northwestern Pa. Trenton Test Sets Record Depth for Area

By STAFF CORRESPONDENT

PITTSBURGH, Pa., Mar. 10.—The Ohio Oil Co. 1 Jay Childs in Springfield Township, Erie County, is down to 4,778 ft., which is 341 ft. in the Trenton lime with no further shows of the light green oil found near the top of the strata.

At that depth (elevation 630 ft.) the well is now the deepest in that section of Pennsylvania, exceeding the 4,450-ft. depth of the famed Presque Isle well, about 20 miles east of the Jay Childs which was drilled in 1887-8, the only well in that area drilled to the Trenton lime.

Meantime, in another deep hole on Chestnut Ridge in South Union Township, Fayette County, Peoples Natural Gas Co. continued drilling through the Oriskany sand in 3 Piedmont Coal Co. which, after 150 ft. of sand, was still showing only a small volume of gas. At 157 ft. in that formation, a pay was struck which gaged 2,800,000 cu. ft. and the hole was bottomed at 7,272 ft., or 185 ft. below the top of the sand. Further south, this company is drilling 4 Piedmont Coal Co., at 4,277 ft.

Here, New Penn Development Co., William E. Snee et al struck the first gas in 3 Summit Hotel (Heyn) at 6,419-21 ft. which had a volume of 400,000 cu. ft. At 6,434 ft., the volume increased to 1,500,000 cu. ft. and the well is now drilling at 6,440 ft. It was shut in after striking the second pay for casing and rocked up in 7 hours to 2,100 lb. This well, starting at an elevation of 2,315 ft., topped the Onondaga chert at 6,395 ft., or subsea 4,080 ft. This placed it higher on structure than the discovery well by 200 ft. and also considerably higher than any well on Chestnut Ridge. A 7-in. hole is being carried and it will be watched with interest.

In Maryland these operators have run about 5,000 ft. of casing in the test on the Humberson farm on the Accident dome in Garrett County and have only about 1,000 ft. to complete the job before resuming drilling.

SUMMARY OF COMPLETIONS

West Virginia

	No.	Prod.	Footage
Oil wells	2	302	2,840
Gas wells: Oriskany field	3	*4.3	15,081
Others	13	*5.1	28,630
Total	18		46.551

Southwest Pennsylvania

Gas wells	3	*.8	8,190
Dry holes	1		3,444
Total	4		11,634

*Million cu. ft.

SOUTHWEST PENNSYLVANIA COMPLETIONS

Clarion County

Piney Township: M. J. Rhea Oil & Gas 1 B. Hoover, 150,000 cu. ft. gas, Hundred-foot sand, T.D. 1,135 ft.

Greene County

Jackson Township: Equitable Gas 1 William Kerr, 133,000 cu. ft. gas, Gordon sand 3,395-3,455 ft., 55,000 cu. ft. gas; Bayard sand 3,712-25 ft., gas 3,714-16 ft., T.D. 3,768 ft.

Indiana County

Center Township: T. W. Phillips Gas & Oil 2 A. L. Light, dry, through Bradford sand, T.D. 3,444 ft.

Westmoreland County

Upper Burrell Township: Peoples Natural Gas 1 J. P. Fitzgerald, 474,000 cu. ft. gas, Tiona sand, T.D. 3,287 ft.

DRILLING

Armstrong County

Boggs Township: John Wray et al 3 Ralph Williamson, fishing.
Cowanshannock Township: Equitable Gas 1 V. S. Carroll, location, elev. 1,400 ft.
William McCollins 1 A. L. McCullough, 600 ft.
Kittanning Township: Local Co. 1 S. E. Hellman 1,170 ft.
Local Co. 1 Alex Dunmire, rig up.
Equitable Gas 1 Mary Stitt, 1,800 ft., cleaning out.
L. L. Livingood 1 H. Wright, 1,070 ft.
Plum Creek Township: Peoples 2 William J. Boyer 3,115 ft.
Peoples 2 Quinter Boyer, moving in rig.
James Wright 1 fee, 2,010 ft.
South Bend Township: Equitable 1 Margaret A. Claypool, rig on location, elev. 1,173 ft.
Valley Township: Humphrey, Stone & McCall 1 J. McAfoose, 1,240 ft.
Wayne Township: R. C. Galbraith et al 2 William Alcorn, location.

Clarion County

Limestone Township: Owens-Illinois Glass 1 Clark Steel, 775 ft.
Monroe Township: Owens-Illinois 2 J. W. Aites, 605 ft.

Fayette County

Franklin Township: Eberly et al 1 Clifton, 2,108 ft.
German Township: Eberly et al 2 Felix Valerio, 1,250 ft.
Menallen Township: Wahler-Powers Oil & Gas 2 W. L. Rockwell, Fifth sand 2,235 ft., 60,000 cu. ft. gas at 2,235 ft., drilling 2,260 ft.
Nicholson Township: Duquesne Gas 1 John Spoh, 1,810 ft.

Greene County

Jackson Township: Equitable 1 Clara Roberts, 555 ft.
Peoples 1 Roy L. Wise, 915 ft.
H. E. Milliken et al 1 E. Chaney, 2,223 ft.
Cleveland-Cameron 1 Cleveland Morris, 2,360 ft.
Monongahela Township: Equitable 1 William Hart, 580 ft.
H. B. Scott et al 1 Andrew Kovack, 1,500 ft.
Greensboro Gas 1 Longenecker heirs, 2,087 ft.
D. E. Mayne et al 1 Andrew Kovack, 1,407 ft.
Judson Bell et al 2 E. R. Gabler, 1,301 ft.
Brummage et al 1 Tolbert Whooley, 1,314 ft.
Morris Township: Rommey Rutan et al 1 Albert Rutan, 955 ft.
Richhill Township: Charles Hart et al 1 Ross Galloway, 480 ft.
Springhill Township: H. E. Milliken et al 1 John Minor, 1,240 ft.

Indiana County

Armstrong Township: T. W. Phillips G. & O. 1 Lewis Weiss, 1,310 ft.
Center Township: T. W. Phillips 1 Charles Johnston 1,800 ft.
White Township: T. W. Phillips 1 Ella B. Campbell, 2,550 ft.

Jefferson County

Beaver Township: T. W. Phillips 1 Walker Smith, 2,425 ft.

Washington County

Amwell Township: Bungard et al 1 Lucille Frazee, 20 ft.
Morris Township: Union Gasoline & Oil 4 W. E. Craft, 1,925 ft.
Carnegie Natural Gas 2 Nelan heirs, 989 ft.
Conger et al 1 W. C. Archer, rigging up.
Mount Pleasant Township: McGuigan O. & G. 1 H. S. Buchanan, 250 ft.
North Strabane Township: Keystone Gas 2 John Ross, 2,470 ft.
Somerset Township: Equitable 1 Jerry Myers, 630 ft.
West Bethlehem Township: Carnegie 3 Chartiers-Southern R. R., 1,791 ft.

Westmoreland County

Allegheny Township: Peoples 1 Howard Wise, 1,911 ft.
Bell Township: Peoples 2 John McCreary, 2,820 ft.
Dome Gas 2 J. F. Wolford, 3,275 ft.
Upper Burrell Township: Peoples 1 H. W. Wylie, drilling deeper from 2,437 ft., now 2,625 ft.

NORTHWESTERN PENNSYLVANIA

Ohio Oil Co. 1 Jay Childs, Springfield Township, Erie County, is drilling ahead at 175 ft. in the Trenton. The showing of green oil, estimated at 1 bbl., natural, encountered in the top of the Trenton, has decreased as drilling progressed due possibly to mudding off as the 5⅛-in. casing was cemented in the Utica shale at 4,400 ft., 37 ft. above the top of the Trenton. A little water was encountered below the oil showing in the Trenton.

WEST VIRGINIA

In Clay County the Pittsburgh & West Virginia Gas Co. 7724 P. M. Summers, in the Otter district, a gas well completed in 1939, is now turning to oil and has been shut in waiting on tankage. It is estimated good for 300 bbl. a day. It is located about 2 miles southwest along the Hansford anticline from 7735 A. L. Morrison in Birch district, Braxton County, which came in as an oil well though producing some gas. This would extend the oil pool to the south. Both the gas and oil are being produced from the Injun sand at an average depth of 1,950 ft. Between these two wells, there are also some gas wells making a fair amount of oil.

In Harrison County the deep rotary test of the Hope Natural Gas Co. on the C. S. Gribble farm in Grant district is drilling at 9,886 ft. In Monongalia County this company has the rig standing for the Oriskany test on the H. C. Greer lease in Morgan district.

Boone County

Crook district: Westmoreland 1 fee, 58,000 cu. ft. gas, Big lime 2,174-2,290 ft., Big Injun 2,290-2,400 ft., Berea 2,872-99 ft., gas in Berea after shot, T.D. 2,919 ft.
Scott district: Cambridge Gas 3 C. H. Price, drilled deeper, 212,000 cu. ft. gas, started 2,252 ft. in Berea, Brown shale 3,380-3,418 ft., 3,545-60 ft., and 3,675-3,810 ft., R.P. after shot 200 lb., T.D. 3,810 ft.

Clay County

Union district: Thompson Gas, Chalmers Oil & Gas 4 S. W. Samples, 134,000 cu. ft. gas, through Injun sand, T.D. 1,916 ft.
Thompson Gas 51-T Thompson Coal Land, 231,000 cu. ft. gas, Salt sand, T.D. 1,014 ft.

Gilmer County

Center district: Carnegie Natural 1 Cain & Neely, 300,000 cu. ft. gas, Big lime 1,825-97 ft., Big Injun 1,892-1,977 ft., gas 1,935-72 ft., T.D. 2,012 ft.
Carnegie Natural 3 A. A. Cain heirs, 368,000 cu. ft. gas, before shot, Salt sand 1,350-1,410 ft., gas 1,397-1,401 ft., Maxton sand 1,485-1,530 ft., gas 1,505-13 ft., Injun sand 1,882-1,983 ft., dry, T.D. 1,998 ft.
Glenville district: Pittsburgh & W. Va. 7791 Toy E. Hinger, 250,000 cu. ft. gas, Big Injun 1,845-1,972 ft., gas 1,940-48 ft., T.D. 1,979 ft.
Pittsburgh & W. Va. 7737 O. F. Wolfe, 205,000 cu. ft. gas, Big Injun 1,592-1,652 ft., gas 1,628-48 ft., T.D. 1,664 ft.
Troy district: Bruce Haney et al 1 Anderson Butcher, 29,000 cu. ft. gas, Salt sand 1,165-1,360 ft., gas 1,221-26 ft., T.D. 2,100 ft.

Hancock County

Grant district: R. J. Braden Co. 61 C. E. Brenneman, 2 bbl., Berea, T.D. 890 ft.

Mingo County

Warfield district: McKinley Trent, trustee, 3 Noah A. Stepp, 260,000 cu. ft. gas, Big lime 1,734-1,963 ft., Big Injun 1,963-2,014 ft., black lime 2,014-46 ft., gas 1,735-1,835 ft., gas 1,963-85 ft., T.D. 2,046 ft.

Monongalia County

Battelle district: Victor Oil & Gas 1 Amos Brewer heirs, 189,700 cu. ft. gas, Pittsburgh coal 969-75 ft., Gordon stray sand 3,114-16 ft., Gordon sand 3,185-92 ft., Fourth sand 3,230-33 ft., T.D. 3,390 ft.

Wayne County

Union district: Southern W. Va. Oil & Gas 3 A. W. Preston, 31,000 cu. ft. gas, Big lime 1,489-1,648 ft., Big Injun 1,655-1,765 ft., Berea 2,295-2,312 ft., brown shale 2,945-3,270 ft., gas 3,200 ft., T.D. 3,280 ft.

ORISKANY GAS FIELDS

Kanawha County

Poca district: Joe Rubin et al 1 E. M. Derrick, 2,463,000 cu. ft. gas after shot, Corniferous lime 4,874 ft., Oriskany 5,002 ft., T.D. 5,032 ft.
Godfrey L. Cabot 6 J. L. McLean heirs, 231,000 cu. ft. gas, Corniferous lime 5,001 ft., Oriskany 5,091 ft., drilling 5,101 ft.
United Carbon 1 Dock Haynes, 1,614,000 cu. ft. gas, Corniferous lime 4,829 ft., Oriskany 4,938 ft., drilling 4,948 ft.

DRILLING

Poca district: Godfrey L. Cabot 16 Putnam, top Corniferous lime 5,008 ft.
Columbian Carbon 1 John Price, 6,628 ft. in Clinton sand.
Columbian Carbon 1 Copenhaver heirs, 5,976 ft., below Newburg.

NEW WORK

Braxton County

Birch district: Pittsburgh & W. Va. Gas 7796 Maggie E. Pierson, eltv. 1,139 ft.
Salt Lick district: A. D. Prusty 1 Hutchinson, elev. 1,002 ft.

Calhoun County

Sherman district: Creed Yoak 3 John W. Church, elev. 1,020.4 ft.

Jackson County

Washington district: United Fuel Gas 5009 J. F. Bumgardner.
Ravenswood district: Everett Starcher et al 1 W. H. Archer, elev. 872 ft.

Kanawha County

Poca district: Columbian Carbon 1 J. F. Burdette, elev. 732 ft.

Marion County

Paw Paw district: Penn-Illinois Oil & Gas 1 W. N. Shuman, elev. 1,222.12 ft.

Pleasants County

McKim district: F. R. Ball 2 Flemings, elev. 946 ft.

Ritchie County

Murphy district: Lois Swadley 1 W. F. Snodgrass, elev. 759 ft.

Roane County

Harper district: Gerald D. Jones 1 Mount Lebanon Methodist Church, elev. 1,006 ft.

Upshur County

Banks district: Cumberland & Allegheny Gas Co. 305 P. S. Lewis, elev. 1,774 ft.

Oil Production Opened in New Horizon in Perkins Field

By F. L. SINGLETON

NEW ORLEANS, La., Mar. 10.—A new sand discovery in the Perkins field, Calcasieu Parish, has apparently converted this gas-condensate field into an oil field as Lisbon-Iberia Oil Co. 1 Edgewood Land & Logging Co. was reported to be flowing at the estimated rate of 20 bbl. of 22.8-gravity oil per day while testing through perforated casing at 5,376-86 ft. The well is testing through a 12/64-in. choke and casing pressure was 750 lb. The hole is bottomed in a side-tracked hole at 6,272 ft. and 5½-in. casing was cemented at 5,461 ft. The well was tested following a 1½-hour drill-stem test at 5,376-81 ft. which recovered 2,618 ft. of oil and 270 ft. of salt water. The discovery well, Humble 1 Edgewood Land & Logging Co., was completed in August 1939 as a gas-distillate well from perforated casing at 7,038-42 ft., and the present well is located about ½ mile to the southwest in 6-8s-10w.

SUMMARY OF COMPLETIONS

	No.	Bbl.	Footage
Oil wells: Fields	11	3,225	84,596
Dry holes: Fields	1		5,811
Wildcats	2		16,410
Total	14		106,817

New Kenilworth Pay

Gas and distillate production from a new sand was opened in the Kenilworth field, St. Bernard Parish, as Vendome Petroleum Corp. 4 Kenilworth Plantation was flowing gas and a small amount of distillate while testing through a ⅛-in. choke from perforated casing at 10,356-62 ft. This is the third well to be drilled since the discovery well which was completed in sand at 10,600-10 ft. The present well is east of the discovery well.

With the abandonment of another Wilcox test in the Glenmora area, Rapides Parish, interest in this type of development shifted to a deep test being drilled in the Eola field, Avoyelles Parish, by S. W. Richardson. The well is 2-D Haas Investment Co., an exploratory test in 46-1s-2e. At the close of the week drilling was temporarily halted at a total depth of 10,740 ft. due to a fishing job. At this depth the well is about 2,196 ft. in the Wilcox section which was topped at 8,544 ft. Sand showing oil was cored in the regular Wilcox pay at 8,545-56 ft. and 8,564-74 ft.

In the same parish, W. C. Brock 1 Snowden, a Wilcox test which was deepened recently to a total depth of 7,210 ft., is reported to have been taken over by Phillips Petroleum Co. The company is reported to have cemented casing for a production test after sidewall cores showed possible production at 6,600-6,700 ft. Top of the Wilcox was reported at 5,185 ft. The well is located in 22-3n-5e.

Wildcatting at Steady Pace

Wildcatting throughout the district continues to be maintained at a steady pace. Locations announced during the week include Gulf Refining Co., projected deep test, south of Houma, centering in Township 20s, Range 18e, Terrebonne Parish. The company controls a block of several thousand acres in the area which has been worked extensively with geophysical instruments. Southeast of Houma, Terrebonne Parish, Sinclair Prairie Oil Co. 1 Aragon Plantation, a projected deep test located in the Bourg area in 5-18s-19e, is expected to get under way shortly, while in St. Mary Parish, Texas Co. is moving in material for 1 Woodward & Longmire located in the Morgan City area, east of the Bateman Lake field in 27-16s-12e. In northeastern Vermilion Parish, Cities Service Oil Co. staked location for 1 Homeseekers Development Co. in 11-11s-1e.

In the West Bay field, Plaquemines Parish, Tide Water 1 State, north of the discovery well, is bottomed at 7,400 ft., and 7-in. casing was cemented at 7,389 ft. Two feet of sand with an oil show was recovered the previous week at 7,260-72 ft., while 3 ft. of shale and sand with an oil show was logged at 7,272-86 ft. Should the well fail to produce from this section, the hole is expected to be drilled deeper.

Union Oil Co. of California 1 White, the discovery well of the Schooner Bayou field, Vermilion Parish, is scheduled to be worked over after production dropped due to salt-water intrusion. This well has been furnishing fuel to other drilling operations, which recently established production in two new sands. Whether the well will be recompleted in the discovery pay at 10,500 ft. or plugged back and completed in one of the new sands was not revealed.

LOUISIANA GULF COAST COMPLETIONS

Acadia Parish

Jennings field: Shell 14 Conover-Community, 280 bbl., 12/64-in. choke, perf. casing 7,485-99 ft., T.D. 7,900 ft.
Stanolind 119 Crowley O. & M. Co., 360 bbl., 7/64-in. choke, perf. casing 7,595-7,615 ft., T.D. 8,568 ft.
North Crowley field: Humble 6 Reiners, 336 bbl., 5/32-in. choke, perf. casing 8,823-27 ft., T.D. 8,840 ft.

Ascension Parish

Darrow field: Humble 33 Humble-Community, dry, T.D. 5,811 ft.

Cameron Parish

Chalkley field: Humble 4 School Board, 264 bbl., 7/64-in. choke, perf. casing 8,620-30 ft., T.D. 8,647 ft.

Evangeline Parish

Ville Platte field: Continental 1 Adam Tate, Tr. No. 7, 390 bbl., 7/64-in. choke, T.D. 10,060 ft.
Wildcat: Bering 1 Fruge, dry, T.D. 8,050 ft.

Iberville Parish

Bayou Blue field: Superior 8 Schwing, 175 bbl., 10/64 in. choke, perf. casing 5,725-65 ft., T.D. 6,304 ft.

La Fourche Parish

Golden Meadow field: Brown-Wood 1 Pitre, 160 bbl., 10/64-in. choke, perf. casing 5,432-44 ft., T.D. 5,497 ft.
Frankos-Manikos 2 LeBlanc, 120 bbl., 10/64-in. choke, perf. casing 5,146-52 ft., T.D. 5,163 ft.
Serice & Serice 1 LeBlanc, 129 bbl., ⅛-in. choke, perf. casing 5,438-44 ft., T.D. 5,502 ft.

Plaquemines Parish

Quarantine Bay field: Gulf 8-A Orleans Levee Dist., 483 bbl., 7/64-in. choke, perf. casing 8,493-8,513 ft., T.D. 8,515 ft.
Gulf 22 State, 528 bbl., 7/64-in. choke, perf. casing 8,656-70 ft., T.D. 9,600 ft.

Rapides Parish

Wildcat: Crosby Drilling Co. 1 Phillips, top Wilcox 7,850 ft., dry, T.D. 8,360 ft.

LOUISIANA GULF COAST DRILLING REPORT

Calcasieu Parish

Gulf 1 Calcasieu National Bank, Hayes prospect, 18-11s-5w, drilling shale 8,897 ft.
Gulf 1 Miller, southeast flank Edgerly field, drilling shale 7,392 ft.

Cameron Parish

Superior Oil Co. of California 1 Miami Corp., south of Grand Lake field, 29-14s-3w, drilling shale 5,343 ft.

Iberia Parish

Gulf 1 Petit Anse Co., Avery Island salt dome, drilling shale 11,286 ft.

Jefferson Parish

Carter 1 Cravens, Westwego area, drilling shale 9,287 ft.

La Fourche Parish

Texas Gulf 1 Drexler-Community, east flank Chacahoula dome, drilling shale 5,294 ft.

Plaquemines Parish

Phillips 1 State Bastian Bay, 48-20s-29e, drilling shale 10,989 ft.
Texas 1 State-Delacroix, 34-15s-15e, drilling shale and lime 10,100 ft.

St. Bernard Parish

California Co. et al 1 Biloxi Marsh Lands Co., 25-12-16e, T.D. 10,747 ft., S.D.

St. Martin Parish

Shell 1 State, Duck Lake prospect, 1-15s-11e, drilling shale 10,665 ft.
Superior Oil Co. of California 1-B St. Martin Land Co., north offset to discovery well. Section 28 dome, drilling shale 10,525 ft.

St. Mary Parish

Humble 1-C Miami Corp., 15-15s-6e, drilling shale 11,130 ft.

Vermilion Parish

Phillips 1 Dugas, east of discovery well, Erath field, drilling shale 5,016 ft.
Texas 1 Broussard, Erath field, 21-13s-4e, drilling shale 10,109 ft.

Southwest Texas Fields

(Continued from Page 70)

SOUTHWEST TEXAS COMPLETIONS

LOWER GULF COAST DISTRICT

Jim Wells County

Premont field: Gulf Lake Oil Co. 1-A Laughlin, dry, T.D. 6,012 ft.
Sandia field: O. W. Killam 14 Wade, 24 bbl., ¼-in. choke, perf. casing 3,947-49 ft., 3,938-42 ft., T.D. 4,005 ft.
Wade City field: Rodney DeLange 18 McNeill, 135 bbl., ⅞-in. choke, perf. casing 4,916-22 ft., T.D. 4,930 ft.
Rodney DeLange 7 McNeill, 200 bbl., ⅞-in. choke, perf. casing 4,898-4,904 ft., T.D. 4,916 ft.

Nueces County

Clara Driscoll field: R. B. Bryant 3 Rogers, 52 bbl., ¼-in. choke, perf. casing 5,555-66 ft., T.D. 6,055 ft.
Earl Fain 1 Clark Driscoll, 70 bbl., 3/32-in. choke, perf. casing 5,819-26 ft., T.D. 5,969 ft.
Richard King field: Southern Minerals 5 Walker, 98 bbl., 7/64-in. choke, perf. casing 5,641-49 ft., T.D. 5,650 ft.
Stratton field: Conroe Drilling Co. 5-B Sellers, dry, T.D. 6,786 ft.
Southern Minerals 11 Stratton Community, 92 bbl., 3/32-in. choke, perf. casing 6,407-23 ft., T.D. 6,630 ft.

San Patricio County

East White Point field: Sinclair Prairie 1-688 State, 68 bbl., 18 hr., ¼-in. choke, perf. casing 5,813-17 ft., T.D. 6,527 ft.
Midway field: William F. Morgan 1 Schmidt, 74 bbl. oil plus 5 per cent water, perf. casing 5,327-31 ft., T.D. 5,338 ft.

Victoria County

Coleto Creek field: Averill & Cox 1 Terrell, 30 bbl., jetting, perf. casing 2,835-40 ft., T.D. 2,848 ft.
Heyser field: Gulf 50-B Traylor, gas well, perf. casing 5,450-60 ft., T.D. 5,519 ft.
McFaddin field: Transwestern 18-E McFaddin, gas well, T.D. 6,405 ft.
Victoria field: W. Stewart Boyle 2 Meyer, 33 bbl., pumping, perf. casing 3,035-41 ft., T.D. 3,059 ft.

LAREDO DISTRICT

Bridwell field: Bridwell 4 Parr, 198 bbl., ⅞-in. choke, sand 4,311-14 ft., T.D.
Driscoll field: Continental 62-A Driscoll, 273 bbl., ¼-in. choke, perf. casing 3,360-71 ft., T.D. 3,375 ft.
Wildcat: Wilcox & Henderson Coquat 1 Garcia, dry, T.D. 5,515 ft.

Jim Hogg County

Colorado field: V. F. Neuhaus 6-C Trevino, 112 bbl., ¼-in. choke, sand 2,994-3,013 ft., T.D.
Humble 27 Atwood, 47 bbl., 5/32-in. choke, T.D. 3,111 ft.
Kelsey field: Humble 1 Juarez Marcos, 65 bbl., 5/32-in. choke, T.D. 4,748 ft.
Humble 79 McGill, 116 bbl., 7/64-in. choke, T.D. 4,743 ft.
Manila field: Bridwell Employees 2 Zachry, 45 bbl., 10 hr., pumping, sand 2,585-89 ft., T.D.
Wildcat: Gillespie & Sons 1 Gutierrez, dry, T.D. 3,043 ft.

McMullen County

Calliham field: Argo Royalty Co. & Rhode, gas well, perf. casing 1,760-83 ft., T.D. 3,078 ft.

Starr County

Boyle field: Barsodi 4 Vela, temporarily abandoned, T.D. 3,202 ft.
Charco Blanco field: Fred Liberty 1 Seabury, dry, T.D. 1,834 ft.
Rincon field: Continental 42-B Slick, 299 bbl., open tubing, perf. casing 3,744-56 ft., T.D. 4,500 ft.
Wildcat: Transwestern 2 Cameron, dry, T.D. 5,525 ft.
W. W. Zimmerman 1 Garcia, dry, T.D. 2,858 ft.

Webb County

Wildcat: Killam et al 1 Puig, dry, T.D. 3,045 ft.

SAN ANTONIO DISTRICT

Bastrop County

Wildcat: Marts & Beaven 1 Walker, dry, T.D. 2,426 ft.

Caldwell County

Bee Creek field: Ralph Ogden 4-B Miears, 261 bbl., pumping, chalk oil show 2,017-60 ft., T.D. 2,154 ft.

Medina County

Chicon Lake field: Valdemar & Fearis 1 Medina Irrigation Farms, junked, T.D. 860 ft.

Wilson County

Wildcat: M. S. Lake 1 S. D. Lorenz, dry, T.D. 3,214 ft.

SOUTHWEST TEXAS DRILLING REPORT

Duval County

J. B. Blanchard et al 1 Parr, Sur. 134, drilling shale 3,415 ft.
Henderson Coquat 1 Garcia, Jose Marcello Hinojosa grant, drilling shale 6,123 ft.
H. J. Mosser et al 1 Hoffman, SW of Tarancahuas field, coring 2,190 ft.

Jim Hogg County

Sal Vieja Oil Co. 1 Pena, NE of Patel field, drilling shale 2,904 ft.
Sun 1 McCampbell, S of Hebronville, coring shale 4,710 ft.

Nueces County

Ginther, Warren et al 1 Eggert, Sec. 83, George H. Paul's Subd., wildcat, Agua Dulce area, drilling shale 6,257 ft.

San Patricio County

S. E. W. Oil Corp. 1 Morris, semiwildcat, Midway field, drilling shale 6,010 ft.

Turner Valley Completion Is Field's Second Largest

By VICTOR LAURISTON

CHATHAM, Ont., Mar. 8.—Aggregate allowable for Turner Valley limestone crude producers for March has been set by the Alberta Conservation Board at 806,000 bbl., or 26,000 bbl. a day, the same rate as in February. The rate includes 21,000 bbl. a day, regular allowable production based on conservation principles, war-emergency allocation of 4,000 bbl. a day, and 1,000 bbl. a day allowable for newly completed wells on test. Major producers in the new schedule are: Home Oil 2, 850 bbl. a day; Home Oil 1, 745 bbl.; Alberta Oil Incomes 2, 700 bbl.; Home Oil 3, 675 bbl.; Foothills Oil & Gas 5, 660 bbl.; Home Oil 5, 600 bbl.; Foothills 7, 560 bbl.; Royalite 48, 500 bbl., and Alberta Oil Incomes 1, Home Oil 4, and Anglo-Canadian 7, 450 bbl. each.

Turner Valley Lime Tests

North Turner Valley: Home Oil Co. 1, LSD 8, 33-20-3w5, finishel at 8,010 ft. has been given allowable of 745 bbl. a day, making it the second largest well in the field. Home Oil 6, LSD 9, 28-20-3w5, finished at 8,446 ft., is completing tests for allowable.

Royalite Oil 58, has location in LSD 7, 22-20-3w5, offsetting Model Oils 1 producer.

Atlas-British Dominion 2, LSD 4, 17-21-3w5, most northerly test in the field, is spudding.

West Central field: Anglo-Phillips 2, LSD 9, 35-19-3w5, is below 7,377 ft., after getting the lime at 7,270 ft. Okalta Oil 10, LSD 12, 18-19-2w5, is resuming after setting casing in the top of the lime at 7,506 ft. Independent Royalties 1, LSD 7, 24-19-3w5, is in the lime around 7,700 ft.

Alberta Pacific Royalties 1, LSD 14, 6-19-2w5, is rigged.

Tests in Other Areas

Moose dome: McColl-Frontenac Oil 1, LSD 9, 6-23-6w5, in the Devonian limestone below 4,495 ft., with some gas.

Sarcee-Reserve: Inland-Sarcee 1, LSD 2, 4-23-4w5, standing at 1,265 ft., waiting for rotary outfit.

Blood Indian Reserve: Northwest-West Petroleum 1, LSD 3, 20-5-23w4, deepening from 6,741 ft. after cementing off water.

Steveville field: Standard of British Columbia 3 Princess, LSD 5, 13-20-12w4, is below 2,426 ft., with production expected around 3,300 ft. Standard 4 Princess has been spotted in LSD 13, 12-20-12w4. The company will continue survey work in the Steveville-Princess area this season as well as in other parts of the Alberta plains area, and is planning to drill one wildcat well in addition to its Steveville tests. Steveville Oils 1, LSD 5, 18-20-11w4, has derrick up and is waiting for rotary outfit from Anglo-Canadian 9 in Turner Valley. McDougall-Segur Exploration Co. of Calgary has test spotted in 3-20-12w4.

Vermilion field: Western-Battleview 2, LSD 9, 30-50-5w4, has location north of No. 1 producer.

Saskatchewan Drilling

Little Pine structure: Paynton Oils 1, NW 29-46-20w3, has spudded but owing to water shortage will be left standing till the weather moderates. Structure is in a potential oil and gas area 25 miles west of North Battleford and 45 miles east of Lloydminster, and has been geologized by Prof. F. H. Edmunds of the University of Saskatchewan, and Arthur Kendall, president of the company. Test is being financed by a Vancouver, B. C., group, using drilling equipment of North Taber Royalties, Ltd., with Glen Boller supervising operations. It is expected to reach the producing horizon in 30 days actual drilling. Paynton 2 has been located in SE 17-46-20w3.

Ontario Completions

Raleigh Township: Gas Producers Syndicate 8 Gilbert Pardo, E½ Lot 140 North Talbot Road, finished with 2,000,000 cu. ft. a day.

South Norwich Township: Dominion Natural Gas, Lot 28, Concession 11, dry hole at 925 ft.

West Oxford Township: Dominion Natural Gas Co., Lot 5, Concession 2, dry hole at 720 ft.

New Tests Starting

Windham Township: Dominion Natural Gas, Lot 6, Concession 12, drilling.

Yarmouth Township: Dominion Natural Gas, Lot 59, North Talbot Road, drilling.

Rancher's Hunch Pays Off

GARDEN CITY, Kans., Mar. 10.—A "hunch" of the late James Cowgill, former Kansas City mayor, that there was natural gas under his 20,000-acre pasture ranch south of Garden City was a good one.

A 5,291,000-cu. ft. gas well has been brought in on the vast cattle range assembled by Cowgill soon after the turn of the century.

Until his death in 1922, Cowgill refused oil and gas leases on the ranch because leasers were unwilling to drill wells on the property, many miles north of the vast Hugoton pool.

Salem Test Completed

MATTOON, Ill., Mar. 10.—Unofficial sources stated last week that Texas 21 Tate, NE NW NW 5-1n-2e, in the Salem pool of Marion County, Illinois, will be plugged back and produced from the Devonian. The well, a St. Peter test, was drilled through the Prairie Du Chien which was topped at 5,566 ft. What the well found in the Trenton and the St. Peter has not been revealed by the company inasmuch as it was a stratigraphic test.

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CRUDE-OIL PRICES IN REPRESENTATIVE FIELDS

Complete crude-price schedules are now being published in the first issue of each month. The last complete schedule was published in the March 6 issue. All changes in crude-oil-price schedules will be published completely in the first issues following the announcement of the changes. Following are representative crude-price schedules in barrels (42 gal.):

East Texas	$1.10
Conroe	1.27
Tepetate, Louisiana	1.03
Smackover, Arkansas, heavy	.73
Illinois basin	1.15
Pecos County, Texas	.78
Lance Creek, Wyoming	.77
Bradford, Pennsylvania	2.15

Gravity Schedules

Top prices include all gravities above grades designated, and low prices include all gravities below grades designated:

	Signal Hill, California*	Oklahoma, Kansas	Gulf Coast, Texas
14-14.9	$0.65	....	....
15-15.9	.65	....	....
16-16.9	.65	....	....
17-17.9	.65	....	....
18-18.9	.65	....	....
19-19.9	.69	....	$0.86
20-20.9	.73	$0.70	.88
21-21.9	.78	.72	.90
22-22.9	.82	.74	.92
23-23.9	.86	.76	.94
24-24.9	.90	.78	.96
25-25.9	.95	.80	.98
26-26.9	.99	.82	1.00
27-27.9	1.03	.84	1.02
28-28.9	1.07	.86	1.04
29-29.9	1.10	.88	1.06
30-30.9	1.14	.90	1.08
31-31.9	....	.92	1.10
32-32.9	....	.94	1.12
33-33.9	....	.96	1.14
34-34.9	....	.98	1.16
35-35.9	....	1.00	1.18
36-36.9	....	1.02	1.20
37-37.9	....	1.04	1.22
38-38.9	....	1.06	1.24
39-39.9	....	1.08	1.26
40-40.9	....	1.10	1.28

*Effective February 1, 1940.

Crude-Oil Price Changes

Cosden Petroleum Corp. has posted a flat price of 70 cents per barrel for crude in Yoakum, Gaines, Cochran and Hockley counties, Texas. Crude contracts in the Wasson field are not affected.

An advance of 5 cents per barrel for Oregon basin, Wyoming, crude was posted March 1 by Ohio Oil Co., increasing the flat price to 45 cents per barrel.

Good Woodruff Sand Well Extends Tinsley Play

By GEORGE WEBER

JACKSON, Miss., Mar. 10.—The southeast-edge play at Tinsley was intensified last week by completion of a good Woodruff sand well which ran low on the Selma formation. As a result, new locations and further leasing and trading increased, with new operators coming into the Tinsley picture.

A new Lauderdale wildcat to be drilled by Magnolia Petroleum Co. and a tentative location by Danciger in Stone County marked the new developments. Leasing of interest is going on in Issequena and Leake counties.

SUMMARY OF COMPLETIONS

	No.	Bbl.	Footage
Oil wells	3	1,520	14,825

In Fayette County, Alabama, J. O. Shepherd is planning to drill a test on a 40,000-acre block south of the town of Berry. Georgia also has a new drilling operation. A rotary rig is being moved into Dougherty County, southwest of Albany, for Ellis & Hatton, who recently leased 18,000 acres in Dougherty, Baker and Calhoun counties from Reynolds Lumber Co.

Tinsley

Considerable interest is shown in General Oil Co. (P. J. Ruman) 1 Robertson, N WNW 29-10-2, a southeast test in the Tinsley field, Yazoo County. The outpost encountered the Selma at 4,929 ft., low for the area, but found one of the best Woodruff sections in the field. It was completed last week for an initial of 672 bbl. daily through a ½-in. choke. The Woodruff was topped at 4,998 ft. and extended 105 ft. to 5,103 ft., with an 8-ft. break at 5,053 ft. Salt water was encountered at 5,074 ft., giving the well an estimated net oil section of about 68 ft.

As a result of this completion, interest has increased, and four new locations in 29, 30 and 31-10-2 were announced last week, with more to come shortly.

MISSISSIPPI COMPLETIONS

Tinsley—Yazoo County

General Oil Co. (P. J. Ruman) 1 Robertson, NW NW 29-10-2, 672 bbl., ½-in. choke, T.D. 5,138 ft., 5½-in. casing 5,103 ft., Woodruff section 4,998-5,103 ft.

Hassie Hunt 2 Stutts, SW SE 30-10-2, 600 bbl., ½-in. choke, T.P. 150 lb., Woodruff section 4,987-5,066 ft.

Union Producing Co. 1 Carson, NW NW 25-10-3, 248 bbl., ¼-in. choke, T.P. 90 lb., 7-in. casing 4,576 ft., T.D. 4,621 ft., topped Woodruff section 4,577 ft.

MISSISSIPPI DRILLING REPORT

Attala County

Clint Crosby 1 Allen, SW SW 33-13n-5e, S.D. 4,534 ft.

Clarke County

Walsingham & Earles 1 School Land, SW NW NE 16-4n-15e, S.D. 3,200 ft.

Wildcat—Lauderdale County

Magnolia Petroleum 1 Culpepper, NW NE 4-8n-14e, first report.

Noxubee County

Fred Stewart (former Hope & Thompson) 1 Donahoo, NW 25-16n-17e, drilling sidetracked hole 1,827 ft.

Stone County

H. I. Morgan 2 Dantzler Lumber Co., NE SE 4-4s-10w, drilling 5,822 ft.

Sharkey County

British American Oil Prod. Co. 1-A Houston est., N½ NE SW 23-11-7w, rigging up.

Warren County

W. O. Allen 1 J. W. Culley, SE NW 6-13n-3e, fishing 3,800 ft.

Waggoner Bros. Oil Co. 1 Parker, NW NW 17-14n-1e, 10¾-in. casing 180 ft., waiting on cement.

Winston County

Frame & Young 1 H. C. Chancellor, NE 9-13n-14e, set surface casing, waiting on cement.

Yalobusha County

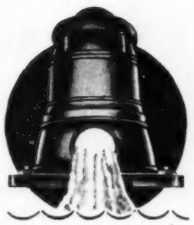
J. E. Green 1 Walter Goldman, SW SE NW 23-25-6e, old well drilling deeper from 1,375 ft., drilling 2,227 ft.

Rocky Mountain Runs

Production estimates for week ended March 8:

	Bbl.
WYOMING	
Salt Creek	14,660
Big Muddy	1,180
Badger Basin	180
Black Mountain	100
Byron	3,890
Cody Dome	50
Cole Creek	710
Dallas Derby	170
Dutton Creek	50
East Mahoney-Ferris	150
Elk Basin	750
Frannie	3,250
Garland	2,050
Grass Creek	1,890
Hidden Dome	80
Hudson	240
Iron Creek	10
LaBarge	1,870
Lance Creek	25,970
Lost Soldier	5,500
Mahoney	2,050
Maverick Springs	710
Medicine Bow	710
Mule Creek	190
Oregon Basin	6,400
Osage	600
Poison Spider	290
Quealy Dome	440
Rock River	2,550
Teapot	10
Warm Springs	70
Wertz	6,410
Total Wyoming	83,180
MONTANA	
Kevin-Sunburst	4,620
Border	30
Cat Creek	470
Cut Bank	12,290
Dry Creek	720
Pondera	860
Total Montana	18,990
COLORADO	
Iles Dome	1,560
Florence	220
Fort Collins and Wellington	340
Wilson Creek	870
Moffat	250
Greasewood	20
Rangely	70
Tow Creek	120
Price	260
Total Colorado	3,710
NEW MEXICO	
Arrowhead	3,480
Caprock	40
Cooper	2,840
Corbin	70
Eaves	690
West Eunice	370
Eunice	17,120
Halfway	260
Hardy	2,870
Hobbs	9,240
Jal	390
Langlie	3,950
Lynch	390
Lynn	920
Mattix	4,660
Monument	17,540
North Lynch	20
Penrose	4,620
Rhoades	300
Skaggs	70
Skelly	1,960
South Eunice	2,460
South Lovington	1,260
Vacuum	11,980
Artesia-Maljamar	18,100
Aztec-Bloomfield	10
Getty	100
Hogback	200
Rattlesnake	350
Table Mesa	120
Total New Mexico	106,380
Total Rocky Mountain region	212,260

The Man WITH THE TRANSIT



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MICHIGAN OPERATIONS

Wildcat Southeast of Crystal Flows 150 Bbl. in 12 Hours

By OTTO C. PRESSPRICH

SAGINAW, Mich., Mar. 10.—A wildcat well being drilled in southeast of the old Crystal field in Montcalm County late last week lifted Michigan oil development for the period out of a depressing low reflected by the fact that the only new production came from two small completions in Allegan County, there being 16 dry holes in 11 counties. In addition two locations were abandoned, drilling was halted on the Clare County deep test and in Kent County there was a natural-gas completion gaging 3,140,000 cu. ft. a day.

The Crystal development caused excitement among oil men as they eagerly watched the task of controlling flow which started Wednesday and produced an estimated 150 bbl. within 12 hours. Drilled by Homer Fulton and several associates, the test is 1 Spencer, Section 13, Crystal Township. The pay was at 3,204 ft. Water coming into the hole, apparently from Traverse above, added to difficulties.

SUMMARY OF COMPLETIONS

	No.	Bbl.	Footage
Oil wells: Allegan County	2	110	2,713
Gas wells: Kent County	1	*3.14	1,085
Dry holes: Allegan County	3	.....	5,339
Isabella County	2	.....	7,561
Kent County	2	.....	3,751
Others	6	.....	11,784
Total	16	.....	32,163

*Million cu. ft.

The well is a half mile south of old dry and abandoned producers. The original Crystal boom started 6 years ago this month. The field now is practically played out.

Sun Oil Co., most active of operators in Clare County at present, halted drilling on 1 McIntosh, Section 16, Hamilton Township, at 5,400 ft. It is the deepest ever drilled in the county.

Hopes for westward extension of the Adams-Arenac pool were dashed as Boswell & Blackmer 1 Cousins, Section 27, was abandoned dry at 3,014 ft.

Drilling permits issued during the week totaled 17, bringing the year's total to 142. Locations are in 12 counties, four in Allegan, two each in Van Buren and Ottawa, others in Midland, Bay, Montcalm, Clare, Kent, Isabella, Arenac, Barry and Missaukee.

MICHIGAN COMPLETIONS

Allegan County

Dorr Township: G. C. Berlin 1 Wagner, SW SW NW 16-4n-12w, dry, T.D. 1,633 ft.
Salem Township: L. D. Hendershott 1 Heasley, NE SW SE 9-4n-13w, dry, T.D. 1,972 ft.
Frank S. Vahue 1 Berens, NE NW SW Sec. 20, dry, T.D. 1,739 ft.
Trowbridge Township: W. H. Clock 1 Graves, SW SW SW 16-1n-13w, 75 bbl., acid, T.D. 1,356 ft.
James E. Flanigan 1-A Clair, NW NE SE 29-1n-13w, 35 bbl., natural, T.D. 1,357 ft.

Arenac County

Adams Township: Boswell & Blackmer 1 Cousins, SW SE NE 27-19n-3e, dry, T.D. 3,014 ft.

Clare County

Hamilton Township: Sun Oil Co. 1 McIntosh, S½ SW NE 16-19n-3w, temporarily abandoned, T.D. 5,400 ft.
Summerfield Township: Union Drilling & Producing Co. 1 Consumers Power, N½ NW NW 16-20n-5w, dry, T.D. 3,411 ft.

Hillsdale County

Hillsdale Township: Arco Crude Oil 1 Hergert, SE NE SE 36-5s-3w, dry, T.D. 1,414 ft.

Huron County

Paris Township: Fortney Oil Co. 1 City Bank, NE NE SE 14-15n-14e, location abandoned.

Isabella County

Union Township: Burks White 1 Ball, W½ NE SE 29-14n-4w, dry, T.D. 3,713 ft.
Wise Township: Socony-Vacuum Oil Co., Inc., 1 Beale, NW SW SE 6-16n-3w, dry, T.D. 3,848 ft.

Kent County

Bryon Township: F. W. Haskins 1 Nyehuis, SE SE SW 6-5n-12w, dry, T.D. 1,814 ft.
Walker Township: Midwest Refineries 1 Mason, NW SW NW 6n-12w, natural gas, 3,140,000 cu. ft., T.D. 1,085 ft.
Voorhees Drilling Co. 2 McKay, NW NW SW 19-7n-12w, dry, T.D. 1,937 ft.

Lenawee County

Medina Township: Voorhees Drilling Co. 1 Gillen, N½ N½ N½ 12-9s-1e, dry, T.D. 920 ft.

Montcalm County

Ferris Township: Fortney Oil Co. 1 Babick, NW SW SW 17-11n-5w, location abandoned.

Ottawa County

Tallmadge Township: C. A. Perry 1 Terpstra, NW NE NE 15-7n-13w, dry, T.D. 1,897 ft.

Van Buren County

Arlington Township: Twin Drilling Co. 1 Earl, SE SE NW 24-2s-15w, dry, T.D. 1,128 ft.

Leaseholder Must Drill Indian Lands

OKLAHOMA CITY, Okla., Mar. 10.—The holder of an oil and gas lease on land owned by a restricted Indian must pay compensatory royalty if he does not drill an offset well when the leased land is being drained, U. S. District Judge Bower Broaddus ruled last week.

The court ordered J. O. Hayes, who held an oil and gas lease on 7 acres of Indian land in Okfuskee County, to pay $788.35 compensatory royalty.

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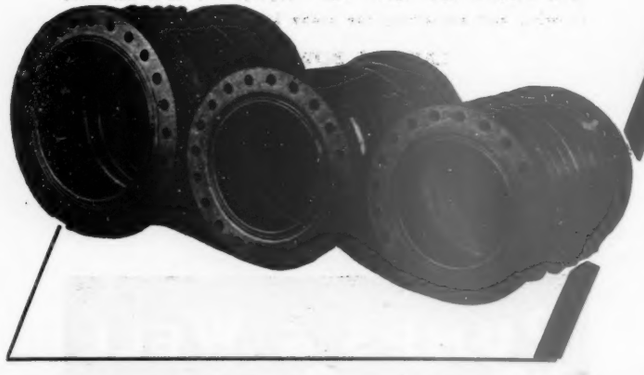

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MARKET RECORD OF ACTIVE OIL STOCKS . . .

Compiled by Carl H. Pforzheimer & Co., 25 Broad Street, New York City, Member New York Stock Exchange and New York Curb Exchange

New York Stock Exchange

1941 High	1941 Low	Week ended Mar. 8 High	Low	Close	Stocks—	Total shares outstanding	Par value	Latest dividend	Payable or last paid	Dividends paid in 1940	Com. sh. earn. 1939	1938	1940 High	1940 Low	1939 High	1939 Low
50⅜	44	45¼	44½	44¾	Amerada Corp.	788,675	N.P.	50cQ	1-31-41	$2.00	$1.56	$2.07	58½	38½	74½	50
24¼	20¾	21¼	20¾	21⅛	Atlantic Refining	2,663,999	$25	25cQ	3-15-41	1.00	1.66	1.40	27⅛	18¼	24¾	18⅛
10½	8	8¾	8¼	8⅝	Barber Asphalt Co.	390,223	$10	25c	5-21-40	.50	1.39	—.85	16⅝	8½	21	10¼
9⅝	7⅝	8¼	8	8	Barnsdall Oil Co.	2,558,779	$5	15c	3-10-41	.60	.76	1.26	13⅜	7⅛	19½	11⅛
6	5⅜	5½	5⅜	5½	Consolidated Oil Corp.	13,751,726	N.P.	12½cQ	2-15-41	.72½	.55	.55	8⅛	5½	9⅞	6½
20½	17⅝	18¼	17⅝	18⅛	Continental Oil of Delaware	4,682,572	$5	25cQ	3-31-41	1.00	1.35	1.10	25	16⅛	31½	19⅞
4½	3½	3⅝	3⅝	3⅝	Houston Oil	1,098,618	$25	....	10-17-30	....	.43	.83	6⅞	3⅜	9⅜	4½
11⅜	9¾	10	10	10	Lion Oil Refining	435,815	N.P.	25cQ	12-31-40	1.00	1.50	2.09	14⅜	9	18⅛	10
15⅛	13⅜	13⅝	13	13	Mid-Continent Petroleum	1,857,912	$10	40c	12-2-40	.80	1.42	.56	17⅜	11½	18	11⅛
11	9⅜	9½	9½	9½	Mission Corporation	1,378,645	$10	25c	12-20-40	.25	.87	1.04	11⅜	7⅛	14⅞	8⅜
6⅝	4⅞	5¼	5	5¼	National Supply	1,155,517	$10	....	12-22-37	....	—.87	—.79	9¾	4⅝	15½	5⅝
7⅞	6¾	7	6¾	7	Ohio Oil Co.	6,563,377	N.P.	25c	12-14-40	....	—.10	.25	8⅜	5⅜	10½	6
7⅛	5½	5⅝	5¾	5¾	Pacific Western Oil	1,000,000	N.P.	40c	12-19-39	....	.81	1.22	8⅞	5½	11⅞	7
8½	7¼	7½	7½	7½	Pan American Pet. Trans.	4,702,945	$5	25c	12-21-40	.25	1.10	.08	10½	6¾	8¾	5
41¼	35⅜	37	36	36⅞	Phillips Petroleum	4,449,052	N.P.	50cQ	3-1-41	2.00	2.21	2.03	41⅜	27⅛	46½	31¼
16⅞	14⅜	14⅝	14⅜	14⅝	Plymouth Oil Co.	1,038,633	$5	25c‡	12-23-40	‡1.30	2.38	2.59	22¾	15	24	17⅛
8⅞	7	7½	7¼	7¼	Pure Oil Co.	3,982,031	N.P.	25c	12-20-40	.25	1.11	.38	11½	6¾	11¾	6⅛
9	7¼	8⅞	8⅝	8¾	Richfield Oil Corp.	4,010,000	N.P.	50c	12-21-40	.50	.65	.51	9¼	5⅞	10¼	6⅝
15⅜	12½	13¼	12½	13¼	Seaboard Oil of Delaware	1,244,383	N.P.	25cQ	3-15-41	1.00	1.40	1.52	20	11	24⅜	15½
12⅜	10⅛	11⅜	11⅞	11¼	Shell Union Oil	13,070,625	N.P.	50c	12-20-40	.75	.77	.72	13⅛	7⅝	17¼	9⅞
22⅜	18⅞	20½	19½	20½	Skelly Oil	995,349	$15	50c	12-20-40	1.25	1.99	2.27	23¼	12¼	29½	15½
9¼	8¼	8⅝	8¼	8⅝	Socony-Vacuum	31,206,071	$15	25cSA	3-15-41	.50	1.10	1.29	12½	7⅛	15⅛	10¼
20⅜	17⅞	18¼	17⅞	18¼	Standard Oil of California	13,003,953	N.P.	25cQ	3-15-41	1.00	1.38	2.22	26⅛	16¼	33⅝	24¼
27⅞	25½	26⅛	25½	25¾	Standard Oil (Indiana)	15,272,020	$25	25c	3-15-41	1.50	2.23	1.82	29	20⅜	30	22⅜
36½	33	34⅝	33¾	34½	Standard Oil of New Jersey	27,280,998	$25	75c†	12-16-40	1.75	3.26	2.86	46½	29⅞	53½	38
40⅛	34¼	37½	36	37½	Standard Oil of Ohio	753,740	$25	37½c	3-15-41	2.00	6.64	1.81	41¾	26¼	32¾	17
58¾	53	54¾	53	53⅛	Sun Oil	2,434,863	N.P.	25cQ§	3-15-41	*1.00	2.74	1.07	65⅞	46¾	66	45¾
1⅜	1½	1⅜	1⅜	1⅜	Superior Oil Corp.	1,388,979	$1	10c	12-28-40	.10	.04	.24	2½	1⅛	3⅝	1⅜
40¼	34½	35⅞	34⅜	35	Texas Corp.	10,876,139	$25	50cQ	4-1-41	2.00	3.02	2.13	47⅝	33	50⅜	32½
6	5⅜	3⅛	3	3	Texas Gulf Producing Co.	888,147	N.P.	10c	12-14-40	.20	.69	.86	4¼	2½	5⅜	3¼
6	5¼	5⅜	5¼	5⅜	Texas Pacific Coal & Oil	888,236	$10	10c	3-1-41	.40	1.00	1.16	8⅝	5⅜	11⅜	7
10⅜	9⅜	9⅝	9⅜	9½	Tide Water Associated	6,371,827	$10	15c	3-3-41	.70	1.05	1.28	12	8¾	14¼	9½
14½	12⅜	13⅛	12⅛	13⅛	Union Oil Co. of California	4,666,270	$25	25c	2-15-41	1.00	1.25	1.47	17½	12	19¾	15⅛
29¾	25⅝	28	27½	27½	Union Tank Car Co.	1,177,381	N.P.	50c	3-3-41	1.75	2.07	1.16	29⅞	22¾	24¼	20⅛
1⅞	1⅝	1⅝	1⅝	1⅝	Wilcox Oil & Gas	470,768	$5	10c	2-15-40	....	.77	.52	3⅝	1¾	4¼	2⅜

*Also 5 per cent in stock. †Includes extras. ‡Also 2 per cent in stock. §Also 6 per cent in stock. —Deficit.

New York Curb Exchange

1941 High	1941 Low	Week ended Mar. 8 High	Low	Close	Stocks—	Total shares outstanding	Par value	Latest dividend	Payable or last paid	Dividends paid in 1940	Com. sh. earn. 1939	1938	1940 High	1940 Low	1939 High	1939 Low
7	5⅛	5⅞	5½	5⅝	American Republics Corp.	1,308,049	$10	25c	12-18-40	....	$0.14	—$0.22	10¾	4½	11¾	5½
1¾	1⅜	1⅜	1⅜	1⅜	Bridgeport Machine Co.	263,700	N.P.	$1.25	12-30-37	....	—.95	—.14	3¼	1⅜	7¼	2½
40¼	38	40	38	38	Buckeye Pipe Line Co.	200,000	$50	$1	3-15-41	$4.00	3.13	2.36	43	28	34¾	26½
110¼	105	..	..	..	Chesebrough Mfg. Co.	120,000	$25	$1.50Q†	3-31-41	6.00	7.87	5.32	117	95	130	108⅝
5⅛	3¾	5	4½	4⅝	Cities Service (new)	3,703,978	$10	....	6-1-32	....	.68	.23	6¾	4	9¼	4¼
⅞	⅝	¾	¾	¾	Cosden Petroleum	465,332	$1	....	.....	....	....	....	2⅛	⅝	2¼	½
15¼	12½	13½	12½	13¼	Creole Petroleum	6,974,356	$5	50cSA†	12-16-40	1.00	1.38	1.64	24¼	11⅝	28	16⅝
4¼	3¾	4¼	4	4¼	Darby Petroleum	351,390	$5	25cSA	1-15-39	....	.03	.69	4⅜	2⅞	7⅛	3⅝
1⅛	1	..	..	..	Derby Oil & Refining	263,162	N.P.	....	.....	....	—.37	—.91	2	¾	2⅝	1½
28⅜	21½	..	..	..	Eureka Pipe Line	50,000	$50	$3.50†	2-1-41	2.25	.63	—.37	31	20¼	23	15⅛
33½	31	32	31	32	Gulf Oil Corp.	9,076,202	$25	25cQ	4-1-41	1.25	1.69	1.43	39⅞	25⅛	45⅛	29¼
63	53¼	54	53¼	53¾	Humble Oil & Refining	8,987,840	N.P.	37½c	4-1-41	2.00	3.33	3.98	68	47⅛	71	52½
6⅞	5¾	6½	6½	6½	Imperial Oil of Canada	26,965,078	N.P.	25c	12-2-40	.62½	.71	.96	12⅜	5⅜	17	11⅜
3⅞	3⅜	..	..	..	Indiana Pipe Line	300,000	$7.50	20c	11-15-40	*2.80	.33	.47	7¾	3	7¼	5½
10¾	8⅞	9½	9¼	9½	International Petroleum	14,324,088	N.P.	30c	12-21-40	1.25	1.19	1.98	10¾	8¼	27½	17
2⅝	1⅜	..	..	..	Kirby Petroleum Co.	500,000	$1	10c	4-15-38	....	.06	.14	2¾	1⅝	3¾	2⅛
10⅛	9⅜	9¾	9½	9½	Lone Star Gas	5,518,347	N.P.	30c	12-21-40	.70	.98	.88	10⅜	7⅝	10½	7⅛
4⅝	4⅛	4⅝	4⅛	4⅝	Louisiana Land & Exp.	2,966,762	$1	10c	3-15-41	.35	.22	.45	6¼	3¾	7¾	4
10	9½	..	..	..	Margay Oil Corp.	149,943	N.P.	25cQ	4-10-41	1.00	1.52	2.28	17	9¼	17	14½
8	7	7¼	7¼	7¼	Midwest Oil Co.	998,474	$10	45c	12-16-40	.90	.99	.93	8½	6½	8¾	6⅝
5¾	5⅛	5¼	5⅛	5⅛	Mountain Producers	1,593,584	$10	30cSA	12-16-40	.60	.70	.62	6¼	4⅞	6	4⅞
12⅜	11	12	11¾	12	National Fuel Gas	3,810,183	N.P.	25cQ	1-15-31	1.00	.95	.84	13⅛	10	14	11¼
12¾	10¼	11	10¾	11	National Transit	509,000	$12.50	50c	12-16-40	1.00	.91	.88	12½	8¾	9½	7¼
1⅛	1	1⅛	1⅛	1⅛	New Mexico and Arizona	1,000,000	$1	1c	12-1-37	.	.02	.02	1¼	¾	1¾	1
7¼	6⅝	7¼	7¼	7¼	New York Transit	100,000	$5	30c	5-15-41	.60	.88	.16	7¾	5¼	6	4
9¾	8¼	..	..	..	Northern Pipe Line	120,000	$10	40c	12-2-40	.80	.31	.24	9⅞	6	7	4½
3⅜	2⅝	3½	3⅛	3½	Pantepec Oil	2,856,872	$1	....	.	....	....	....	5½	2½	7⅝	4
1½	1	1¼	1	1¼	Root Petroleum Co.	336,045	$1	25c	2-1-37	....	.70	.17	3¼	1	5	1¼
2½	2⅛	2⅜	2⅛	2⅜	Ryan Consolidated	298,931	N.P.	10c	12-28-40	.	.16	.29	3	1½	3	1⅞
8	7	..	..	..	Southern Pipe Line	100,000	$10	25c	3-3-41	.50	.25	—.27	11¾	4¾	4⅞	3½
39¾	37½	38	37	37	South Penn Oil	1,000,000	$25	37½c	3-28-31	2.50	2.84	1.44	44	28	40½	26¾
30½	24½	..	..	..	Southwest Penna. Pipe Lines	35,000	$50	50c	4-1-41	6.50	2.06	—.41	35	21	23	18
20⅜	18	18⅝	18⅜	18⅜	Standard Oil of Kentucky	2,604,790	$10	25c	3-15-41	1.30	1.53	1.45	20⅞	16½	20⅛	17¼
1¾	1⅜	1¾	1½	1⅝	Sunray Oil	1,975,876	$1	5c	12-20-40	.10	.25	.23	2	1⅜	2¾	1¾
3	2¾	3	3	3	Texon Oil & Land	936,024	$2	10c	12-30-40	.40	.49	.56	3⅛	2	4	2⅝
2½	2¼	2⅜	2⅜	2⅜	Transwestern Oil Co.	750,000	$10	.	.....	....	—1.42	.12	3⅜	2	6	2½
ⅱ	⅝	¾	ⅱ	¾	United Gas Corp.	7,818,959	$1	..	.....	....	—.55	—.51	2⅛	¾	3⅜	1⅜

*Includes $2.50 capital distribution. †Includes extras. —Deficit.

Personal Paragraphs

L. B. STABLEFORD, president of Allied Pipe Line Co., St. Elmo, Ill., was in Jackson, Miss., last week to complete arrangements for opening an office there. J. C. DEMPSEY, field superintendent, will be in charge of the Jackson office.

H. W. STRALEY, III, and a group of intermediate students from Baylor University, Waco, Tex., spent the past two week ends in geological trips in the Glen Rose, Tex., area and in the Arbuckle Mountains of Oklahoma.

A. D. MITCHELL was elected president and ROBERT DAVIS and NEAL ELDER were reelected vice presidents of the California Stripper Well Association at its annual election held in Los Angeles last week. CHESTER F. DOLLEY was elected vice president to fill the vacancy created by the election of Mr. Mitchell as president. THOMAS H. WORK was elected secretary-treasurer and RICHARD FENTON was elected executive vice president.

O. H. MULLER, JR., for the past several months sales manager of Fletcher Oil Co., has been appointed general sales manager of Douglas Oil & Refining Co., Los Angeles, Calif.

JOE WILSON, geologist for the Salt Dome Oil Corp., Houston, Tex., delivered a paper on the "Geology of the South Cotton Lake Field, Chambers County" at the weekly meeting of the Houston Geological Society the past week.

J. W. CARNES, vice president of the Sinclair Refining Co. in charge of sales, has returned to his offices in New York after an absence of 2 months during which he recovered from injuries received in an accident.

J. HOWARD PEW, Sun Oil Co., has been appointed chairman of the American Petroleum Institute's 1941 central committee on tanker and barge transportation. R. C. TUTTLE, Atlantic Refining Co., Philadelphia, Pa., is vice chairman.

SAM B. RAITMAN, independent producer, has reopened his office in the Olney Bank and Trust Building, in Olney, Ill.

J. R. JARVIS, superintendent of Lone Star gasoline plants, Dallas, Tex., was awarded the Silver Beaver, highest award a local council can give a volunteer adult Boy Scout leader. The trophy represents "conspicuous service to boyhood."

SAM C. GIESEY, formerly stationed at Midland, Tex., as geologist for Stanolind Oil & Gas Co. and for the past 2 years serving that company in its Shreveport, La., offices, has accepted a position as division geologist for Union Oil Co. of California and will return to Midland, Tex., to assume duties.

E. O. BENNETT, chief engineer for Continental Oil Co. at Ponca City, Okla., delivered a motion-picture illustrated lecture on Gulf Coast recycling work before the newly organized group of Dallas Petroleum Engineers at Dallas, Tex., early this week. The business meeting was preceded by a dinner inaugurating the first official meeting of the Engineers Club of which R. H. McLEMORE, Sun Oil Co., is president.

VICTOR H. WILHELM, long prominently identified with the California oil industry and for several years chief petroleum engineer of Texas Co., with offices in Los Angeles, reported to the Navy as lieutenant commander upon his return recently from New York where he attended the past meeting of the A.I.M.E. Mr. Wilhelm was elected chairman of the Southern California section of the A.I.M.E. last year.

CHARLES L. SUHR, chairman of Pennzoil Co., Oil City, Pa., has been made a member of the state Housing Board of Pennsylvania.

ARTHUR E. JOHNSON, Denver, Colo., president of Argo Oil Corp., has been elected to the board of the United States National Bank of that city.

DR. A. H. BELL, head of the Illinois Geological Survey, addressed the second annual meeting of the Independent Oil Producers Association of Illinois held March 4 at Centralia, Ill.

B. F. BOWERS, formerly associated with the Republic Natural Gas Co., at Corpus Christi, Tex., is now associated with the geological department of the Southern Minerals Corp at Corpus Christi.

D. A. McGEE, geologist with Kerlynn Oil Co., Oklahoma City, Okla., was a guest speaker before the Shreveport Geological Society recently. He talked on the geology of the Dakota basin, North and South Dakotas.

P. J. RUMAN, of New Orleans, La., is president, and P. H. EAGER, JR., of Jackson, Miss., is treasurer of the newly formed Sylvan Oil Co., which will operate a producing lease in the Tinsley oil field of Yazoo County, Mississippi. The company will maintain offices in Jackson, Miss.

Do You Remember?

From The Oil and Gas Journal Files

25 YEARS AGO

Henry Ford expresses confidence that he will soon go into the business of manufacturing gasoline and that he is experimenting with the Rittman cracking process.

Representative Britten proposes an export duty of 50 cents a gallon on gasoline.

20 YEARS AGO

The U. S. Geological Survey values the 50,000 miles of pipe lines in the United States at $500,000,000.

A report from Amarillo states that vast areas in the Panhandle contain one of the largest salt deposits known. The Coble-Heyward well in Hutchinson County passed through a solid vein 111 ft. thick. It has also had several showings of oil. The salt bed may be used for commercial purposes.

Wells in Wyoming are being shut down on top of the sand owing to poor marketing conditions.

10 YEARS AGO

Market prices tumbled 5 cents on March 5 and kept it up daily until 36-gravity Oklahoma crude had fallen from 95 to 59 cents.

Price wars in California have forced a cut in crude prices of from 12½ to 20 cents.

Shell 1 Williams, in the Semitropic area of Kern County, is below the 9,700-ft. level and is now the deepest hole in the world. A decade hence, 10,000-ft. wells may be a common occurrence.

B. C. MONEYMAKER, assistant chief geologist of the T.V.A., recently addressed the Mississippi Geological Society in Jackson, Miss.

O. W. GAUL, Houston, Tex., Shell Oil Co., Inc., was called to Lockport, N. Y., last week by death of his mother.

L. C. HEYDRICK, Wichita Falls, Tex., operator, is recuperating at his home following an appendectomy performed March 3.

B. A. BAKER, superintendent for Lewis Production Co. at Mount Vernon, Ill., was a business visitor in Tulsa last week.

HAROLD S. THOMAS, formerly in the geological department of the Transwestern Oil Co., has moved to Lincoln, Neb., where he will do consulting work.

JOHN W. INKSTER, Shell Oil Co., Inc., geologist at Wichita, Kans., and president of the Kansas Geological Society, presided at a meeting March 4 at which A. I. LEVORSEN, Tulsa, spoke on "Frontiers of Geology."

H. N. LaCROIX, design engineer for Foster Wheeler Corp., will address members of the Ark-La-Tex chapter of Western Petroleum Refiners Association this week on the subject "Hydrogen Sulfide Removal" at the regular monthly meeting in Shreveport, La.

ED S. LARSON, who has been superintendent of the Gas Service Co. in Joplin, Mo., since 1929, recently was made manager of that property. He replaces A. M. GRALL.

J. HOWARD MYERS, safety supervisor, Atlantic Refining Co., Philadelphia, Pa., spoke before the commercial-vehicle section of the Greater New York Safety Council last week.

V. L. ELLIOTT, comptroller of Atlantic Refining Co., addressed the Philadelphia control of the Controllers' Institute of America last week. He urged that all accounting in the defense-program era be done on a conservative basis.

HOWARD S. BRYANT, district geologist for Skelly Oil Co., Tulsa, was honored at a surprise birthday party which his associates planned for him last week. The guests were assembled at Mr. Bryant's home and greeted him on his arrival.

JOSEPH L. BORDEN, assistant chief geologist, Pure Oil Co., Tulsa, addressed members of the Engineers Club of Tulsa this week on "A Trip Down San Juan River," taken last June in a 16-ft. open rowboat. The discussion was illustrated by pictures.

J. C. BREAKER, petroleum engineer for the Coronado Corp., addressed the Petroleum Industries Club, a new organization, at the regular monthly meeting March 5 in Alice, Tex. His subject was "Subsurface Flow in Distillate and Oil Sands." T. H. BRAMMER, Woodsboro, Tex., is secretary-treasurer of the club.

Iowan Made Prexy

Gage Lund, newly elected president and a member of the board of directors of the California Co., was born in Clinton, Iowa, and has been associated with his company since 1925. Mr. Lund studied chemical engineering and geology at Montana State University at Bozeman, Mont., and completed his studies at Leland Stanford University in 1924. He joined the California company in 1925 as geologist in the Rocky Mountain division. He was later transferred to the producing division, and in 1929 was sent to Texas with headquarters in the West Texas district.

GAGE LUND

With the discovery of the East Texas field, Mr. Lund was sent to the East Texas district where he was stationed until 1932, when he was sent to the Gulf Coast district with headquarters at Victoria, Tex. In 1934 he was made superintendent of the Gulf Coast division and was transferred to Houston, Tex. He was made assistant manager of the California Co., and the Standard Oil Co. of Texas, a subsidiary company, in 1939, which position he held until his recent promotion. The California Co., a subsidiary of the Standard Oil Co. of California, operates in Louisiana and the Rocky Mountain district, while holdings in Texas are operated as the Standard Oil Co. of Texas. Mr. Lund will headquarter at Houston.

JOHN REDMAN, engineer for Shell Oil Co. at Tulsa, is on a year's assignment for the company at Pampa, Tex.

JACK GODDARD, Sinclair-Prairie Oil Co. land man at Ardmore, Okla., is on special assignment at Minot, N. D.

P. L. GRIFFITHS, former treasurer of the overseas division, General Motors Corp., has been elected vice president of the Ethyl Gasoline Corp.

GERALD H. WESTBY, president, Seismograph Service Corp., Tulsa, is en route to South America by way of New York to check the company interests in Venezuela and Trinidad.

R. J. DAUGHERTY, mayor of Bartlesville, Okla., and also head of the public relations division of Cities Service Oil Co., has announced his intention to campaign for another term.

HARRY F. SINCLAIR, chairman of the board of Consolidated Oil Corp., and PATRICK HURLEY, the company's general counsel, are now in Venezuela on an inspection tour which will include a trip to the new producing well completed by the company's subsidiary, Venezuelan Petroleum Co.

H. E. KEMP, supervisor of marine operations of Union Oil Co., Los Angeles, Calif., and HORACE E. CATTERMOLE, ship dispatcher of the same company, who have held ratings as lieutenant commanders in the U. S. Navy Reserve for several years, have been called to active duty and are now in uniform.

FRANK M. RACHER, Petrolia, Ont., Canada, who has been drilling for the past 4 years in Trinidad and Venezuela, has left to join the Gulf Oil Co. staff in Brazil.

RHEA SMITH, land man for Carter Oil Co. at Jackson, Miss., has been named a member of a subcommittee of the Jackson Chamber of Commerce to complete arrangements for a banquet to be held March 27, honoring Mississippi oil men.

Shifts: J. D. ROBINSON, superintendent, Union Oil Co., from Bakersfield, Calif., to Orcutt; JAMES HUGHES, president, Hughes Oil Co., from Chicago to Roswell, N. M.; MARK H. O'CONNELL, geologist, Cities Service Oil Co., from Columbus, Tex., to Yoakum, Tex.; J. E. WALKER, geologist, Shell Oil Co., Inc., from Mineola, Tex., to Athens, Tex.; KENNETH W. REES, engineer, Continental Oil Co., from Ville Platte, La., to Hattiesburg, Miss.; E. F. KELSO, superintendent, Phillips Petroleum Co., from El Dorado, Ark., to Eureka, Kans.; K. M. LAWRENCE, geologist, Amerada Petroleum Corp., from Columbus, Miss., to Winnsboro, Tex.; F. B. LOOMIS, JR., geologist, Shell Oil Co., Inc., from Meridian, Miss., to Canton, Miss.; SAM P. MYERS, superintendent, Thomas N. Barry & Co., from Stillwater, Okla., to San Antonio, Tex.; CHARLES T. CONRAD, engineer, Gulf Oil Corp., from Tulsa to Shreveport, La.; HARRY J. McCREADY, JR., Matt-Smith Corp., from Barranquilla, Colombia, South America, to Denver, Colo.; HOMER C. MOORE, geologist, Texas Co., from Oakley, Kans., to Houston, Tex.; HUBERT C. BAUMLER, engineer, Cities Service Oil Co., from Bartlesville, Okla., to Ponca City, Okla.; IVAN J. FENN, geologist, Subterrex Co., from McLeansboro, Ill., to Elkhart, Ind.

ROBERT F. PIELSTICKER, for many years in charge of crude-oil purchasing for Skelly Oil Co., at Wichita, Kans., has been promoted to executive assistant in the same department at Tulsa. He succeeds J. R. NAGLE, who has been transferred to the Kansas City offices.

JOHN VON CARLOWITZ, of Bradford, Pa., has been appointed vice president and treasurer of the Bradford Oil Refining Co., succeeding R. B. SIBLEY, who recently resigned as treasurer. Mr. Von Carlowitz has served as purchasing agent and export manager of the refinery for the past 3 years.

JACK FELDMAN, Golden Bear Oil Co.; WARREN G. BROWN, Paroline Refinery Co.; CLARENCE HASEROT, Pennant Oil & Grease Co.; ART LIEBERMAN, Petroleum Marketing Co.; FRANK REED, Master Lubricants; JEAN SARLIN, Golden State Oil & Grease Co.; KLARENCE F. KRONE, Petrol Corp., and EARL E. PERRY, Sunset Oil Co., were recently elected directors of the newly organized Lubricating Oil Manufacturers and Marketers Association in California.

CARL E. MAGNUSON, field engineer for Shell Oil Co., Inc., has been transferred from St. John, Kans., to Stroud, Okla.

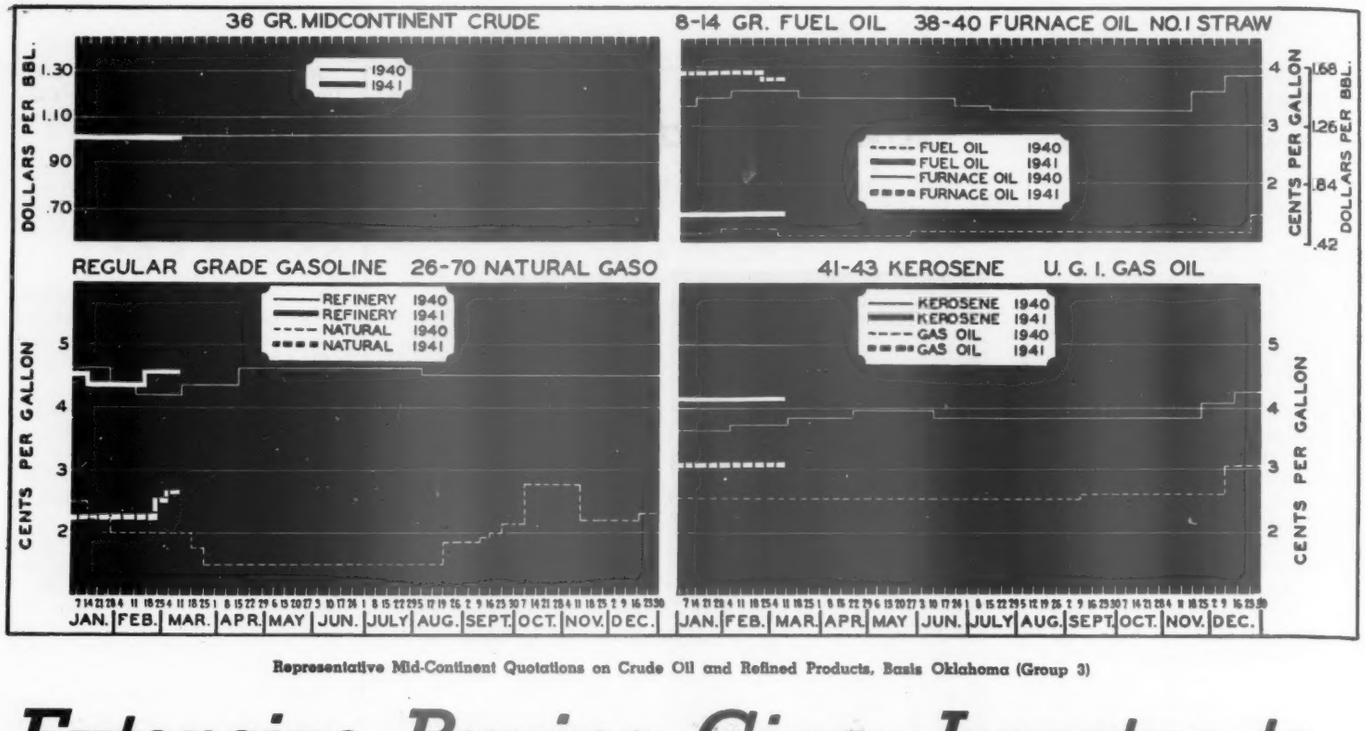
JOHN J. LARKIN, pioneer Tulsa oil man and president of the Larkin Torpedo Co., was host to a group of oil men last week in observance of his birthday.

S. F. SHAW, consulting engineer, San Antonio, Tex., addressed the Fort Worth Geological Society March 10 on "Factors That Influence the Choice of Gas Lift for Producing Oil."

WALTER McCLANAHAN, independent operator of Grand Rapids, Mich., has returned to his offices from a several weeks' vacation spent at Sea Island, Ga.

P. E. WARREN, district manager for Community Natural Gas Co., at Cleburne, Tex., was awarded the signal honor of being named Cleburne's first "good citizen" in a series to be named each week.

C. M. BRYSON, general superintendent, Toronto Pipe Line Co., has been transferred from Tulsa to Evansville, Ind., where he is directing the operations of the company's crude-oil pipe-line system in the southern Illinois-Indiana area which was completed early this week.



Representative Mid-Continent Quotations on Crude Oil and Refined Products, Basis Oklahoma (Group 3)

Extensive Buying Gives Impetus to Inland-Gasoline Price Outlook

By H. STANLEY NORMAN

THE surge of motor-fuel products in the Mid-Continent refining district to higher price levels continued this week with increasing momentum. The only tangible improvement in prices is in the lower-octane grades of refinery gasoline and in condensates which are practically unobtainable at the present-bid prices. Demand for refinery gasoline in Group 3 territory is running substantially ahead of the comparable season last year, convincing operators that resistance to the current price range is justified by the demand outlook.

Some suppliers have lifted their asking price for 60-octane gasoline to 3⅞ cents in the Group 3 territory, an advance of ⅛ cent over the previous high on this grade of motor fuel. Otherwise, there was no tangible evidence of higher motor-fuel prices. Evidence is accumulating that a general rise in Mid-Continent refinery motor-fuel prices is imminent. The more optimistic observers have not retreated from their beliefs that the gasoline advance will develop by March 15. Others are more conservative in their analysis of the market trends and hold that inroads on inventories must develop before the price curve can swing upward.

Natural Prices Advanced

Natural gasoline, reflecting its more sensitive response to motor-fuel market trends, became firmly established at 2⅝ cents per gallon for 26-70 material in Oklahoma (Group 3) territory. Further advances, perhaps overshadowing the recent increases of ⅛ to ¼ cent per gallon, are predicted by plant operators who are unable to bid on all the inquiries currently circulating in the market. The North Texas quotation is unchanged at 2¼ cents for 26-70 natural gasoline but the strong pull on products from the Gulf Coast and northern refineries has given a firmness to the market not present since last October.

New inquiries came into the Mid-Continent refinery market this week for kerosene from distributors in the agricultural districts, particularly, but also from the northern states where space heaters are used extensively in the late winter and early-spring months. Other grades of distillate fuels, excepting tractor-engine grades which held their ground, are showing a softness in keeping with the season. Softness of the light burning oils in this territory is so far confined mostly to a curtailment of refinery loadings. Refiners are not pressed to move distillates and consequently are displaying resistance to price depressants, hoping for another flurry in demand before winter ends.

Mid-Continent refiners are receiving a share of gasoline business that would have, under 1940 conditions, accrued to Illinois operators. Still, the evidence is that middle western states as a group are running far ahead of consumption in 1940. Refiners report that tank-car loadings are running 8 to 15 per cent higher than last year.

Blending More Attractive

The current strength of low-octane motor fuels indicates a substantial increase in the demand for blending stocks which may be brought up to higher specifications by additions of cracked gasoline, natural and tetraethyl lead. Furthermore, the inferior gasolines have been most depressed of all motor fuels placing them in a natural position to show first improvement. Then, too, producers of low-octane gasoline are more numerous among those selling substantial parts of their production on the spot market. All factors combine to make low-octane gasoline more responsive to improvement in spot-market conditions.

Residual fuel oils are actively sought in the Mid-Continent refining district at the current market. Premium inducements of one sort or another are frequently offered for heavy fuels but term contracts with railroads prevent suppliers in this section from offering more than small quantities on the open market. The increase in consumption by railroads ranks along with gains in demand by other heavy industry which tends to solidify the contractural relationship they have with refiners in Group 3 territory.

Solvent-refined lubricants are sought probably as vigorously as any product in the Mid-Continent district but, here again, the supply is strictly limited and hardly any premium motor oils are offered in the open market.

Refined Oil Market Barometer

Another advance of ⅛ to ¼ cent per gallon on all grades of gasoline at Gulf Coast refineries and a less positive gain on inferior motor fuels in the Mid-Continent presage a vigor long absent in petroleum markets. Natural-gasoline prices in Oklahoma have moved to the high side of last week's range and now are awaiting consolidation at 2⅝ cents, an advance of ⅜ cent over the past 2 weeks.

MID-CONTINENT: Kerosene in more active demand. Other distillate fuels dull.

GULF COAST: Offers of No. 2 fuel oil at 2¾ cents more numerous.

CALIFORNIA: Light fuels scarce at present quotations. General market inactive.

PENNSYLVANIA: Active demand for gasoline. Prevailing prices firm.

CHICAGO: Tone of gasoline market firmer, responding to high consumption.

Eastern Coast Gasoline Market Reflecting Higher Gulf Prices

By J. P. O'DONNELL

NEW YORK, Mar. 11.—With the beginning of the heavy consuming season a little more than 2 weeks away and a definitely improved statistical position to work on, the eastern gasoline market has begun to show signs of improvement. The improvement on the East Coast has been somewhat slower in developing than at some other points, particularly the Texas Gulf district where motor fuel is currently enjoying a strong position with inventories well below those of a year ago.

While final conclusive data are not yet available, indications are that there was an exceptionally large increase in motor-fuel demand in the first 2 months of this year. All marketers report an increase in volume ranging from a minimum of 8 to a maximum of 14 per cent. The average increase is 10 per cent. These reports contrast with the Bureau of Mines estimates which foresaw increases of 6.5 per cent in January and 7.6 per cent in February. The March Bureau of Mines forecast predicted an increase of 8.0 per cent in domestic demand which, on the basis of earlier indications, may prove decidedly conservative.

As a result of this improved demand, several of the major marketers advanced tank-car prices on regular-grade-branded gasoline in the New York Harbor area 0.3 per cent during the past week, making the current top price in this area 7.1 cents per gallon. The strengthening in these markets was regarded also as a reflection of the improvement in the Gulf Coast region which supplies a large part of the seaboard market.

Despite the heavy indicated consumption in the northeastern district, Atlantic Coast stocks of gasoline remain above last year's level. In contrast, Texas Gulf stocks were close to 15 per cent lower on March 1 this year than on the corresponding date of last year. However, in terms of days' supply, East Coast stocks are considerably short of 1940's equivalent, according to preliminary estimates of demand.

In addition to the increase in refinery and terminal prices, other posted prices were also advanced at various points. Prices covering various methods of delivery were advanced last week by Socony-Vacuum Oil Co., Inc., in the metropolitan New York area. The commercial tank-wagon price was advanced to 7.0 cents, the consumer tank-car price to 7.3 cents and the undivided dealer tank-wagon price to 7.5 cents, an increase of 0.3 cent in each instance.

In face of the increase in gasoline quotations, fuel oil, both light and heavy, and kerosene revealed additional evidences of late-season weaknesses developing. Price concessions were reported at a number of points and in some instances tank-wagon prices were reduced from 0.2 to 0.4 cent per gallon. Price concessions of 0.1 to 0.2 cent on kerosene and light heating oil have been reported as well as 5 cents per barrel for Bunker C fuel oil.

However, there have been no changes in the majority of refinery and terminal quotations with No. 2 heating oil posted at 4.0 cents, kerosene at 4.6 cents, Bunker C fuel oil at $1.25 per barrel and motor fuel of 72-74 octane at 5.5 to 5.75 cents. Diesel oil is also reported unchanged at $1.65 in the New York Harbor district following several reductions in recent weeks.

The influence of the tanker market on East Coast refined product prices apparently has been ended for the season. The market has been fairly steady for several weeks with a few charters having been closed within a few cents above or below the nominal rates of 35 cents per barrel for gasoline, 38 cents for kerosene and 40 cents for No. 2 fuel oil. With demand for light heating oil due to taper off in the immediate future, further increases in coastwise rates are not anticipated.

Product—	January, 1941	January, 1940
Motor fuel	2,041,474	2,275,148
Kerosene	91,814	391,053
Gas oil	1,594,785	1,549,312
Residual fuel oil	974,616	1,139,004
Lube oils	534,123	1,068,303
Total	5,236,812	6,422,820

An indication that coastwise shipping had declined from midseason highs was seen in the Maritime Commission's announcement of approval of the chartering of seven tankers to Great Britain. These vessels will be used to bring products from the Caribbean to North Atlantic ports for transshipment to the United Kingdom. The vessels, their owners and to whom they were transferred follow:

William G. Marden, 9,114 tons, Standard Oil Co. (New Jersey) to Lago Oil & Transport Co., Ltd.; Swift Arrow, 8,206 tons, Oldwood, Inc., to Royal Petroleum Corp.; Torres, 4,943 tons, Berntuh Lembcke Co., Inc., to Anglo-Saxon Petroleum Co., Ltd.; Argon, 6,952 tons, Socony-Vacuum Oil Co., Inc., to Anglo-Saxon; Hadnot, 6,257 tons, Standard Oil Co. (California) to Asiatic Petroleum Corp.; Mevania, 6,886 tons, Farr Spinning & Operating Co., Royal Petroleum Corp.; Transoil, 1,571 tons, American Petroleum Transport Corp., to Shell Oil Co. of Canada.

Several of these vessels are currently employed

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Gulf Coast Gasoline Prices Move Higher

HOUSTON, Tex., Mar. 11.—No letup in the higher trend of Gulf Coast refinery gasoline was indicated this week with sellers apparently still in complete control. Quotations were advanced another notch, and inquiries for motor fuel at lower prices went unfilled.

At least three shipments of 68-octane gasoline totaling 1,900,000 gal. were reported moved from Corpus Christi, Tex., to give substantial relief to refiners of that area. The shipments were made in drums on cargo vessels. License also has been granted for another shipment to Japan to be made from a Houston refinery before March 15.

One inquiry for 74-C.F.R.-octane-leaded gasoline at 4⅝ cents failed to find a supplier. Several refiners withdrew quotations entirely. However, except for the Japanese movement there were no important spot transactions.

In contrast to gasolines, burning oils and kerosenes developed additional weakness. Under a long period of inactive demand, supplies of burning oil on the Gulf Coast are exceptionally heavy. One cargo of gas oil was sold the past week, the first sizable transaction in many weeks. But this was insufficient to make a dent in the heavy stocks. The price on this cargo was reported at not more than 2¾ cents. The past week saw gas oil freely offered at the latter low price, although some sources of supply held quotations higher.

The higher prices of gasolines, however, are soon expected to offer some inducement to an increase in cracking of gas oil.

Kerosene prices also are down and the situation drastically weak al-

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A.P.I. Weekly Refinery Statistics

Week Ended March 8, 1941

	Capacity reporting (per cent)	Total gasoline stocks (bbl.)	Residual fuel-oil stocks (bbl.)	Gas oil and distillate stocks (bbl.)	Daily crude runs (bbl.)
East Coast	100.0	19,426,000	8,472,000	10,809,000	553,000
Appalachian	91.0	3,269,000	477,000	387,000	119,000
Ind., Ill., and Ky.	90.2	18,957,000	3,070,000	2,774,000	596,000
Okla., Kans., and Mo.	76.9	8,775,000	1,920,000	1,282,000	280,000
Inland Texas	59.6	2,398,000	1,473,000	349,000	129,000
Texas Gulf	89.2	15,434,000	6,936,000	5,078,000	842,000
Louisiana Gulf	97.6	3,309,000	2,128,000	793,000	122,000
N. Louisiana and Ark.	51.5	577,000	551,000	294,000	44,000
Rocky Mountains	56.0	1,643,000	457,000	170,000	35,000
California	87.3	16,440,000	70,208,000	9,938,000	445,000
Total reported	86.2	90,228,000	95,692,000	31,874,000	3,165,000
Est. unreported		6,950,000	1,680,000	555,000	340,000
*Est. total		†97,178,000	97,372,000	32,429,000	3,505,000
*Est. total previous wk.		‡97,510,000	98,647,000	33,725,000	3,585,000
*March 9, 1940		100,434,000	103,100,000	24,239,000	3,450,000

*Bureau of Mines. †Includes 6,539,000 bbl. of aviation gasoline. ‡Revised.

Stocks of Crude Oil in the United States

(BUREAU OF MINES ESTIMATE)

Week ended March 1, 1941	263,176,000 barrels
Week ended February 22, 1941	261,783,000 barrels
Week ended March 1, 1940	244,126,000 barrels

Figures do not include stocks of heavy, unrefinable California crude.

RETAIL OIL MARKETS...

Tank-wagon and filling-station prices on gasoline and kerosene furnished by larger marketing firms

Prices as of March 11, 1941

Taxes

The gasoline quotations given in the following tables include the 1½-cent federal tax, as well as state, county, and city taxes. The gasoline is the regular or standard grade. In most areas lower grades and a premium grade also are available.

Standard Oil Co. (Indiana)

	Gasoline Tank wag.	Gasoline Dir.	Gasoline Incl. tax	Kero. tank wag.
Chicago, Ill.	14.6	12.6	4.5	10.0
Decatur	14.6	13.1	4.5	8.5
Joliet	15.6	14.1	4.5	10.0
Peoria	15.6	13.2	4.5	10.0
Quincy	15.4	13.9	4.5	9.8
Davenport, Ia.	15.6	14.1	4.5	‡10.0
Des Moines	15.4	13.9	4.5	‡9.8
Mason City	15.8	14.3	4.5	‡10.2
Duluth, Minn.	16.4	14.9	4.5	10.8
Mankato	16.0	14.5	4.5	9.5
Minneapolis	16.0	14.2	4.5	10.4
LaCrosse, Wis.	17.0	15.5	5.5	10.4
Green Bay	17.4	15.9	5.5	10.8
Milwaukee	16.8	15.3	5.5	10.2
Detroit, Mich.	14.1	12.6	4.5	8.1
Grand Rapids	14.3	12.8	4.5	9.1
Saginaw	14.9	13.4	4.5	9.1
Evansville, Ind.	16.6	14.4	5.5	†9.8
Indianapolis	16.8	14.8	5.5	†10.0
South Bend	16.8	15.3	5.5	†10.0
Fargo, N. D.	18.2	16.7	5.5	11.6
Huron, S. D.	17.5	16.0	5.5	10.9
Kans. City, Mo.*	14.9	11.9	4.5	8.6
St. Louis*	14.7	13.2	4.5	9.6
St. Joseph	14.9	13.0	4.5	8.4
Wichita, Kans.	13.8	12.3	4.5	7.2

*State tax 2 cents, 1-cent city tax, and 1½-cent federal tax. †Does not include 4-cent state tax. ‡Does not include 3-cent state tax.

Exclusive of state general sales taxes. Discounts to commercial consumers. On purchases per month off tank-wagon prices: 1,000 gal. or more, 1.5 cents off, minimum delivery 25 gal.

Stanolex Fuel Oil in Chicago

Effective Dec. 2, 1940, f.o.b. Chicago, tank-wagon prices: Standard heater oil, 1-99 gal., 9.0 cents; 100-149 gal., 8.0 cents; 150 gal. and over, 7.5 cents. Stanolex fuel oil No. 1, 1-99 gal., 8.5 cents; 100-399 gal., 7.5 cents; 400 gal. and over, 7.0 cents. Stanolex furnace oil, 1-99 gal., 8.5 cents; 100-399 gal., 7.5 cents; 400 gal. and over, 7.0 cents. Stanolex fuel oil A, 1-399 gal., 6.0 cents; 400-799 gal. 5.0 cents; 800 gal. and over, 4.75 cents. Stanolex fuel oil B, 1-399 gal., 6.0 cents; 400-799 gal., 5.0 cents; 800 gal. and over, 4.75 cents. Stanolex Bunker C fuel oil, 1-999 gal., 4.75 cents; 1,000 gal. and over, 3.75 cents.

Ohio

STANDARD OIL CO. OF OHIO

	Gasoline Cons'r tank wag.	Gasoline Di-vided dir.	Gasoline Incl. tax	Kero. tank wag.
Ohio points	16.0	15.0	5.5	*9.0

*Includes state tax of 1 cent.

Atlantic Coast District

STANDARD OIL CO. OF NEW JERSEY

	Gasoline Cons'r tank car	Gasoline Dir. tank wag.	Gasoline Incl. tax	Kero. tank wag.
Atlantic City	11.30	12.60	4.5	7.2
Newark	11.30	12.60	4.5	7.2
Annapolis, Md.	12.85	14.35	5.5	9.5
Baltimore	12.25	13.75	5.5	8.0
Cumberland	13.65	15.15	5.5	10.0
Washington, D.C.	10.50	12.00	3.5	9.0
Danville, Va.	14.45*	16.95	6.5	9 0
Norfolk	13.25	15.75	6.5	10.5
Petersburg	13.55	16.05	6.5	11.2
Richmond	13.55	16.05	6.5	11.0
Roanoke	14.75	17.25	6.5	10.0
Charles'n, W. Va.	14.05	16.55	6.5	11.5
Parkersburg	13.35	15.85	6.5	11.2
Wheeling	14.35	15.40	6.5	11.8
Charlotte, N. C.	16.40	16.50	7.5	9.8
Hickory	16.95	18.45	7.5	9.7
Mt. Airy	16.80	16.00	7.5	10.6
Raleigh	16.15	17.00	7.5	9.9
Salisbury	16.45	15.50	7.5	10.3
Charleston, S. C.	14.25	16.75	7.5	9.25
Columbia	15.10	17.60	7.5	(*)
Spartanburg	15.80	18.30	7.5	(*)

Price basis to Essolene undivided dealers: Dealer tank-wagon price less 0.5 cent per gallon. Price basis to commercial consumers, effective March 8, 1937, in Maryland, District of Columbia, and in Arlington and Fairfax counties in Virginia and March 12 in New Jersey: To contract accounts purchasing at least one full compartment at a time by hose connection, on yearly purchases: From 2,500 to 100,000 gal., consumer tank-wagon price at time and place of delivery: 100,000 gal. per year, consumer tank-car price plus 0.5 cent per gallon. Consumer tank-wagon price generally will be equivalent to dealer tank-wagon price less 0.5 cent per gallon.

Effective January 16, 1939, in North Carolina the commercial consumer schedule became as follows: Single deliveries of 50 gal. or more, consumer tank-wagon price. Single deliveries of less than 50 gal., 4 cents per gallon over consumer tank-wagon price. Generally the posted consumer tank-wagon price will be equivalent to the dealer price, less 0.5 cent per gallon. The above policy also applies in South Carolina, effective January 23, 1939.

*Kerosene business of the company at these points now exclusively handled by dealers.

Southern District

STANDARD OIL CO. (KENTUCKY)

	Gasoline Cons'r tank wag.	Gasoline Net dlr.	Gasoline Incl. tax	Kero. tank wag.
Atlanta, Ga.	15.0	15.0	7.5	9.0
Augusta	16.5	16.5	7.5	9.5
Macon	15.0	15.0	7.5	9.0
Savannah	15.5	15.5	7.5	9.0
Birmingham, Ala.	16.5	16.5	8.5	8.0
Mobile	17.0	17.0	9.5	8.0
Montgomery	18.0	18.0	9.5	10.0
Jackson, Miss.	14.0	14.0	7.5	9.0
Vicksburg	15.5	15.5	7.5	8.5
Jacksonville, Fla.	16.0	16.0	8.5	8.0
Miami	16.0	16.0	8.5	8.0
Pensacola	17.0	17.0	9.5	8.0
Tampa	16.0	16.0	8.5	8.0
Lexington, Ky.	15.5	15.5	6.5	9.0
Covington	13.5	13.5	6.5	9.0
Louisville	15.0	15.0	6.5	8.5
Paducah	12.5	12.5	6.5	8.5

Price basis to tank-wagon consumers, effective January 4, 1937, 3 cents per gallon below tank-wagon price.

Montgomery, Ala., has a county tax of 1 cent per gallon, and a city tax of 1 cent per gallon on gasoline, in addition to state tax, and 1 cent per gallon on kerosene. Mobile, Ala., has a city gasoline tax of 2 cents per gallon: Birmingham, Ala., has a city gasoline tax of 1 cent per gallon; Pensacola, Fla., has a city gasoline tax of 1 cent. All are included in the table.

Pennsylvania and Delaware

ATLANTIC REFINING CO.

	Gasoline Cons'r tank car	Gasoline Dir. tank wag.	Gasoline Incl. tax	Kero. tank wag.
Philadelphia, Pa.	12.5	13.5	5.5	9.5
Pittsburgh	13.0	15.0	5.5	10.5
Allentown	13.0	14.5	5.5	10.5
Erie	12.5	15.0	5.5	10.0
Scranton	13.0	14.5	5.5	10.5
Altoona	13.0	15.0	5.5	10.5
Dover, Del.	...	14.0	5.5	10.5
Wilmington	...	13.5	5.5	10.0

Price basis to undivided dealers, dealer tank-wagon price less 0.5 cent per gallon.

Discount on kerosene, 2 cents per gallon off tank-wagon price on tank-wagon deliveries of 25 gal. or more at one time.

Pacific Coast Territory

STANDARD OIL CO. OF CALIFORNIA

	Gasoline Tank truck	Gasoline Serv. sta.	Gasoline Incl. tax	Kero. tank wag.
San Francisco	16.5	17.5	4.5	11.5
Los Angeles	16.0	17.0	4.5	10.0
Fresno, Calif.	17.5	18.5	4.5	12.5
Phoenix, Ariz.	20.5	21.5	6.5	*17.5
Reno, Nev.	19.5	20.5	5.5	13.5
Portland, Ore.	19.0	20.0	6.5	13.5
Seattle, Wash.	19.0	20.0	6.5	13.5
Spokane	20.5	21.5	6.5	16.5
Tacoma	19.0	20.0	6.5	13.5

*Includes 5-cent state tax.

Discount to dealers: On gasoline, off tank-wagon price, to 100 per cent dealers, 3 cents. To commercial consumers: On tank-wagon price; on single deliveries of 40 gal. and over, advance quantity discount extended at time of delivery, 3 cents. Service-station schedule applies on single deliveries less than 40 gal. On kerosene in tank-car, transport-truck, and trailer delivery, 3 cents off tank-wagon price; plant deliveries to jobbers, 2.5 cents below tank wagon.

March 18, 1939, split dealer discount was canceled.

New York and New England

SOCONY-VACUUM OIL CO., INC.

	Gasoline Cons'r tank car	Gasoline Dir.* tank wag.	Gasoline Incl. tax	Kero. tank wag.
Albany	11.8	12.0	5.5	7.3
Met. New York	12.8	13.0	5.5	7.3
Buffalo	13.3	13.5	5.5	8.0
Rochester	13.5	13.7	5.5	8.7
Syracuse	12.8	12.0	5.5	8 6
Portland, Me.	12.2	12.7	5.5	7.5
Manchester, N. H.	13.4	12.8	5.5	8.5
Burlington, Vt.	11.8	12.0	5.5	7.9
Boston, Mass.	10.9	11.4	4.5	7.6
Worcester	11.5	11.5	4.5	7.5
Hartford, Conn.	11.3	11.5	4.5	6.8
New Haven	11.1	11.3	4.5	6.8
Providence, R. I.	10.9	11.7	4.5	7.4

*Undivided.

Effective August 8, 1940, the company changed its commercial consumer policy in New York and New England to the following:

Full compartment deliveries: Accounts buying less than 20,000 gal. annually, 0.5 cent above the commercial-consumer price; accounts buying from 20,000 to 120,000 gal. annually, commercial-consumer price; accounts buying 120,000 gal. annually and above, 0.25 cent off consumer price. Split compartment deliveries: Delivery of less than a full compartment, 250 gal., commercial-consumer price plus 1 cent. Steel-barrel deliveries: Commercial price plus 3 cents.

Rocky Mountain District

CONTINENTAL OIL CO.

	Gasoline Tank wag.	Gasoline Incl. tax	Kero. tank wag.
Denver, Colo.	14.5	5.5	10.5
Grand Junction	16.5	5.5	12.0
Pueblo	15.5	5.5	9.0
Casper, Wyo.	16.5	5.5	11.5
Cheyenne	12.0	5.5	11.0
Billings, Mont.	16.5	6.5	12.0
Butte	15.5	6.5	13.0
Great Falls	15.5	6.5	12.0
Helena	15.5	6.5	12.5
Salt Lake, Utah	16.0	5.5	14.0
Boise, Idaho	†18.6	6.5	16.0
Twin Falls	†19.6	6.5	16.5
Albuquerque, N. M.	*16.0	7.0	9.5
Roswell	*14.0	7.0	8.0
Santa Fe	‡17.0	7.5	9.5

*Includes city tax of 0.5 cent. †Includes toll-bridge tax of 1 mill. ‡Includes city tax of 1 cent.

Tank wagon represents price to consumers. Dealer represents price to dealers. If no dealer price is quoted, the tank-wagon price applies to all classes of trade.

Central South District

STANDARD OIL CO. OF LOUISIANA

	Gasoline Cons'r tank car	Gasoline Dir. tank wag.	Gasoline Incl. tax	Kero. tank wag.
New Orleans, La.	14.25	16.75	8.5	‡10.0
Baton Rouge	14.75	17.25	8.5	‡10.5
Alexandria	14.75	17.25	8.5	‡10.5
Lafayette	15.00	17.50	8.5	‡10.0
Lake Charles	14.75	17.25	8.5	‡10.0
Shreveport	14.00	16.50	8.5	10.0
Knoxville, Tenn.	18.00	20.00	8.5	12.5
Memphis	15.00	17.00	8.5	11.0
Chattanooga	17.50	17.35	8.5	12.0
Nashville	17.00	17.50	8.5	10.0
Bristol	18.25	18.75	8.5	11.0

Essolene at dealer price less 0.5 cent per gallon to undivided dealers.

‡Includes 1-cent state tax.

Price basis to commercial consumers: Effective May 15, 1937, deliveries of 50 gal. or more in one territory take posted consumer tank-wagon price. Accounts taking deliveries of less than 50 gal. at one time pay posted consumer tank-wagon price plus 4 cents per gallon. Generally, the posted consumer tank-wagon price will be equivalent to the dealer price less 0.5 cent per gallon. Kerosene prices include 1-cent state tax.

Effective February 24, 1939, the company reestablished in New Orleans the commercial consumer policy on motor fuel effective in the rest of the state.

Effective December 12, 1938, the company revised its commercial consumer policy on motor fuel in New Orleans, as follows: Single deliveries of less than 50 gal., consumer tank car plus 2 cents per gallon 50 to 199 gal., consumer tank car plus 1 cent per gallon; 200 gal. and over, consumer tank car plus 0.5 cent per gallon.

Oklahoma and Arkansas

CONTINENTAL OIL CO.

	Gasoline Tank wag.	Gasoline Incl. tax	Kero. tank wag.
Texarkana, Ark.	13.5	5.5	6.0
Fort Smith	13.5	5.5	6.5
Little Rock	16.0	8.0	8.0
Muskogee, Okla.	13.5	5.5	7.0
Oklahoma City	11.5	5.5	6.5
Tulsa	12.5	5.5	6.0

Tank wagon represents price to consumers. If no dealer price is quoted, the tank-wagon price applies to all classes of trade.

Nebraska

STANDARD OIL CO. OF NEBRASKA

	Gasoline Tank wag.	Gasoline Dir.	Gasoline Incl. tax	Kero. tank wag.
Omaha	17.4	15.9	6.5	9.8
McCook	17.0	14.4	6.5	9.5
Norfolk	17.5	15.9	6.5	9.9
North Platte	17.8	16.0	6.5	10.2
Scottsbluff	17.4	15.0	6.5	10.8

Discounts to commercial consumers for tank-wagon deliveries covered only by standard commercial consumers contract, effective January 1, 1935.

Texas

	Gasoline Tank wag.	Gasoline Dir.	Gasoline Incl. tax	Kero. tank wag.
Dallas, Tex.	11.5	15.5	5.5	6.0
Fort Worth	11.5	15.5	5.5	7.0
Houston	12.0	16.0	5.5	8.0
San Antonio	12.5	17.0	5.5	8.0

Naphtha

STANDARD OIL CO. (INDIANA)

	Tank wagon*
Oleum spirits	16.2
V.M.&P. naphtha	16.5
Cleaners' naphtha	15.5
Stanisol	15.5

*Prices include 3-cent Illinois tax but not 1-cent federal tax nor 2 per cent retail occupational tax.

Prices f.o.b. Chicago. Each price subject to discount of 1 cent per gallon for 150-gal. lots if covered by contract.

Canada*

3-Star Imperial Gasoline
IMPERIAL OIL, LTD.

	Gasoline Tank wag.	Gasoline Incl. tax	Kero. tank wag.
Halifax, N. S.	24.5	10.0	18.0
St. John, N. B.	24.5	10.0	18.0
Montreal, Que.	24.0	8.0	16.5
Toronto, Ont.	24.5	8.0	17.0
Hamilton, Ont.	24.5	8.0	17.0
Winnipeg, Man.	27.5	7.0	22.5
Brandon, Man.	28.0	7.0	22.5
Regina, Sask.	25.0	7.0	20.0
Saskatoon, Sask.	28.0	7.0	23.0
Edmonton, Alta.	25.9	7.0	20.0
Calgary, Alta.	23.0	7.0	18.0
Vancouver, B. C.	21.0	7.0	23.0

*Imperial gallon used in Canada.

Divided dealers pay tank-wagon prices. Discount to undivided dealers, 1 cent below tank-wagon price. In Maritime Provinces both divided and undivided dealers pay tank-wagon price.

Tank-Wagon Changes

Standard Oil Co. (Indiana) reduced the dealer-gasoline price 0.7 cent per gallon at Evansville, Ind., February 26.

Standard Oil Co. of New Jersey advanced the consumer tank-car price of gasoline 0.3 cent per gallon throughout New Jersey March 4. Exceptions to this general advance were made at subnormal points, however the entire state now carries the same prices. The company reduced the dealer tank-wagon price on kerosene in New Jersey 0.3 cent per gallon February 28 and on the same day discontinued posting kerosene at Spartanburg, S. C., since direct operation on this product was discontinued.

Standard Oil Co. of Louisiana reduced the consumer tank-car and dealer tank-wagon price of gasoline at Memphis, Tenn., March 1.

Standard of New Jersey reduced the tank-wagon price of kerosene 0.4 cent per gallon at Baltimore, Md., and 0.5

(Continued on Page 103)

PRICES OF REFINED PRODUCTS...

All quotations f.o.b. plant in cars for interstate or export movement except as otherwise noted

Prices as of March 11, 1941
(Most prices in cents per gallon)

The quotations are exclusive of the federal excise taxes of 1 cent a gallon on gasoline and 4 cents a gallon on lubricating oils. Octane ratings in Middle West, Mid-Continent, and Southwest are based on A.S.T.M. method of testing.

Refinery Gasoline

OKLAHOMA (Group 3)—

U. S. Motor grades:		
72-74 octane (regular)	.04⅝	.04⅝
63-66 octane	.04	.04¼
60 octane and below	.03⅝	.03⅞
60-62 400 grades:		
72-74 octane (regular)	.04⅝	.04⅝
63-66 octane	.04	.04¼
60 octane and below	.03⅝	.03⅞

NORTH TEXAS—

U. S. Motor grades:		
72-74 octane (regular)	.04⅝	.04½
63-66 octane	.03⅞	.04⅛
60 octane and below	.03⅝	.03¾
60-62 400	.03⅝	.04½

NORTH LOUISIANA (Ark. and N. La. delivery)—

U. S. Motor grades:		
72-74 octane (regular)	.04⅝	.04½
63-66 octane	.03⅞	.04⅛
60 octane and below	.03¾	.03⅞

ARKANSAS (Ark. and N. La. del.)—

U. S. Motor grades:		
72-74 octane (regular)	.04⅝	.04½
60 octane and below	.03⅝	.03¾

CHICAGO (Based on Group 3)—

U. S. Motor grades:		
72-74 octane (regular)	.04⅝	.04⅝
63-66 octane	.04	.04⅛
60 octane and below	.03⅝	.03⅞
60-62 400 grades:		
72-74 octane (regular)	.04⅝	.04⅝
63-66 octane	.04	.04¼
60 octane and below	.03⅝	.03⅞

PENNSYLVANIA (inland refineries)—

74-76 octane (regular)	.06
72-74 octane	.05¾

CALIFORNIA (domestic movement)—

58-60 400, 65 oct. and higher	.05½	.07
54-58 U. S. Motor	.04¾	.06¼

EAST COAST (domestic)—

U. S. Motor grades:		
New York (Bayonne)*	.05½	.05¾
Philadelphia	.05½	.06¾
Boston	.05⅝	.06
Baltimore	.05½	.06¾
Charleston, S. C.	.06¼	.06½

*All grades of gasoline ⅛ to ¼ cent less for barge shipments. New York Harbor prices are for New York and New England delivery. Prices for New Jersey delivery ¼ cent lower.

GULF COAST (domestic)—

U. S. Motor grades:		
72-74 octane (leaded)		.04¾
70-72 octane (unleaded)	.04⅝	.04¾
68-70 octane (unleaded)	.04½	.04⅝
Below 68 octane (unleaded)	.04¼	.04½

Natural Gasoline

OKLAHOMA (Group 3)—

Grade 26-70		.02⅝
Grade 18-55	.03	.03⅛

NORTH TEXAS—

Grade 26-70		.02¼
Grade 18-55	.02⅝	.02¾

CALIFORNIA—

75-85 375-390	.04½	.05¼

NORTH LOUISIANA (Ark. and N. La. delivery)—

Grade 26-70		.02¼

Tractor Fuel

OKLAHOMA (Group 3)—

40-42 gr., 315-325 l.b.p., 110-flash, 540-550 e.p.	03½	.03⅝
41-43 gr., 300-320 l.b.p., 110-125 flash, 500-520 e.p.	03⅝	.03¾
46-48 gr., 210-230 l.b.p., 480-max., e.p.	.03⅞	.04

Kerosene

(All kerosene water white)

OKLAHOMA (Group 3)—

42-44	.04¼	.04⅜
41-43	.04⅛	.04¼

NORTH TEXAS—

41-43	.04	.04⅛

NORTH LOUISIANA (Ark. and N. La. delivery)—

41-43	.04	.04⅛

ARKANSAS (Ark. and N. La. del.)—

41-43	.04	.04¼

PENNSYLVANIA (inland refineries)—

46	.05¼	.05½
45	.05⅛	.05¼

CHICAGO (Based on Group 3)—

42-44	.04¼	.04⅜
41-43	.04⅛	.04¼

CALIFORNIA (Pac. Coast market)—

38-40 high-burning test	.04½	.05½

NEW YORK (Bayonne, N. J.)—

41-43	.046	.049

GULF COAST (domestic)*—

41-43		.03¼

*Barge price ⅛ cent lower.

Furnace Oil

OKLAHOMA (Group 3)—

Range oil	.03⅞	.04⅛
No. 1 prime white, 38-42	.03¾	.04
No. 1 straw, 38-40	.03¾	.04
No. 2 straw, 32-36	.03⅜	.03⅝
No. 3 zero to 10, 28-32	.03¼	.03½

NORTH TEXAS—

No. 1 prime white, 38-42	.03¾	.03⅞
No. 1 straw, 38-40	.03⅜	.03¾

NORTH LOUISIANA (Ark. and N. La. delivery)—

No. 2, 32-36	.03½	.03⅝

ARKANSAS (Ark. and N. La. del.)—

No. 2, 32-36	.03½	.03⅝

CHICAGO (Based on Group 3)—

Range oil	.03⅞	.04⅛
No. 1 prime white, 38-42	.03¾	.04
No. 2 straw, 32-36	.03⅜	.03⅝
No. 3 zero to 15, 28-32	.03¼	.03½

NEW YORK (Bayonne, N. J.)—

*No. 1	.046	.049
*No. 2	.040	.043
*No. 4		.043

*Barge deliveries ⅛ to ¼ cent under above tank-car price.

Gas Oil and Fuel Oil

(Gas oil per gal., fuel oil per bbl.)

OKLAHOMA (Group 3)—

U.G.I. gas oil, under 35	.03⅛	.03¼
No. 5, low pour point, 18-22	.75	.80
No. 6, 15 and above, 8-14	.60	.65

NORTH TEXAS—

U.G.I. gas oil, under 35	.03	.03⅛
No. 5, low pour point, 18-22	.75	.80
No. 6, 15 and above, 8-14	.60	.65

NORTH LOUISIANA (Ark. and N. La. delivery)—

10-14 fuel oil, industrial		.70

CHICAGO (Based on Group 3)—

U.G.I. gas oil	.03⅛	.03¼
No. 5, low pour point, 18-22	.75	.80
No. 5, 15 and above, 18-22	.60	.70
No. 6, low pour point, 10-16	.60	.70
No. 6, 15 and above, 8-14	.60	65

PENNSYLVANIA (inland refineries)—

36-40	.04½	.05

CALIFORNIA—

Los Angeles:		
30-40 gas oil, per bbl.	1.10	1.25
24 plus diesel, per bbl.	1.10	1.25
24 plus diesel (bunkers)	1.20	1.35
12-16 (bunkers at tidewater)	.65	.75
10-16 (cargo lots)	.65	.75
12-17 (tank cars)	.60	.85
10-17 (high sulfur)	.45	.60
San Joaquin Valley:		
10-18 (tank cars)	.50	.70
24 plus diesel, per bbl.	1.10	1.25
San Francisco:		
24 plus diesel, per bbl.	1.35	1.40
24 plus diesel (bunkers)	1.40	1.50
10-16 (bunkers)	.75	.80

GULF COAST—

No. 2 fuel	.02¾	.03
43-47 diesel		.03
48-52 diesel	.03⅛	.03⅛
53-57 diesel	.03½	.03⅞
58-and-above diesel	.03⅝	.03¾
Diesel bunkers		1.40
Bunker C (bulk cargoes)		.75
Bunker C (bunkers)		.80

NEW YORK (Bayonne, N. J.)—

27 plus. gas oil		.044
28-30 diesel (lighterage 6¼c per bbl.)		1.65
28-30 diesel (tank cars)		.043
Bunker C (to ocean-going ships in N. Y. Harbor)		1.25
Industrial fuel (tank cars)	.0315	.035

Lighterage charge 5c bbl. additional.

Bright and Steam Refined

OKLAHOMA (Group 3)—

200-210 D, 10-25		.18
150-160 D, 0-10		.13½
150-160 D, 10-25		.13
100-110 D, 0-10		.13
100-110 D, 10-25		.12½
Steam refined:		
600 dark green (untreated)		.07

PENNSYLVANIA—

Bright Stocks (Pennsylvania Grade No. 8 color, 140-150 at 210, 545-550 flash):		
10 pour point		.16½
15 pour point		.15½
25 pour point		.14
Steam refined:		
600		.09
650	.09	.11
600 flash	.09½	.12
630 flash	.11	12

Neutral Oil

(Vis. at 100° F. except Pennsylvania and color N.G.A.)

OKLAHOMA (Group 3)—

0-10 pour point:		
150-3		.08
180-3		.08½
200-3		.08½
250-3		.10
280-3		.10½
280-4		.10
300-3½		.11
350-3½		.11½
400-3½		.12
500-3½		.12½
600-3½		.13
100-2½ paraffin oil 10-25		.05¼
10-25 pour point:		
200-3		.08
250-3		.09½
280-3		.10
280-4		.09½

GULF COAST—

Pale oils:		
100-3	.05⅛	.05¼
200-3	.07⅛	.07¼
300-3	.07⅛	.07⅜
500-3½	.08¼	.08½
750-3½	.08⅝	.08¾
1,200-3½	.08⅝	.08⅞
2,000-4		.09
3,000-4		.10½
Red oils:		
200-5-6	.06⅞	.07
300-5-6	.07¼	.07½
500-5-6	.08	.08¼
750	.08⅜	.08½
1,200-5-6	.08½	.08⅝

CALIFORNIA (moving to dom. market)—

Pale oils:		
100-2½-3	.07¼	.08
200-2½-3	.07¼	.08
300-2½-3	.07¼	.08
400-3-4	.07¼	.08
450-3-4	.07¼	.08
550-3-4	.09	.11
600-3-4	.09	.11
Red oils:		
200-4-5	.07¼	.08
300-5-6	.07¼	.08
350-5-6	.09¼	.11½
400-5-6	.09¼	.11½
450-5-6	.09¼	.11½
500-5-6	.09¼	.11½
600-5-6½	.09¼	.11½
700-6½ plus	.09¼	.11½
750-6½ plus	.09¼	.11½
900-6½ plus	.09¼	.11½

PENNSYLVANIA—

150 vis. at 70° F., 3 color, 400-405 flash:	
Zero pour point	.22½
10 pour point	.21½
15 pour point	.20½
25 pour point	.19
200 vis., at 70° F., 3 color:	
Zero pour point	.24½
10 pour point	.23½
15 pour point	.22½
25 pour point	.21

Wax and Petrolatum

(Prices per pound)

OKLAHOMA (Group 3)—

124-126 (A.m.p.) w.c. scale	.02½	.02¾

PENNSYLVANIA (inland refineries)—

122-124 (A.m.p.) w.c. scale	.02½	.02¾
124-126 (A.m.p.) w.c. scale	.02½	.02¾

NEW YORK—

Wax in bags fully refined:		
125-127 (A.m.p.) wax		.0560
128-130 (A.m.p. wax		.0560
130-132 (A.m.p.) wax		.0585
133-135 (A.m.p.) wax		.0615
135-137 (A.m.p.) wax		.0640
Crude scale:		
124-126 (A.m.p.) w.s.	.02¼	.02½
124-126 (A.m.p.) y.s.	.02¼	.02½
Petrolatum in barrels, carload lots:		
Dark green	.02125	.02625
Amber	.02375	.02875
Extra amber	.02625	.03000
Lily white	.04375	.05125
Snow white	.05125	.06000
Cream	.03375	.04125

Export Prices

GASOLINE

GULF COAST—

60-62 400	.03¼	.04
61-63 390	.03¼	.04
64-66 375	.03¼	.04

LOS ANGELES—

U. S. Motor grades:		
Above 69 octane	.05½	.05⅝
65-69 octane	.05¼	.05½
60-65 octane	.04½	.05

KEROSENE

GULF COAST—

41-43 water white	.03½	.03¾

LOS ANGELES—

41-43 water white	.05	.05¼

LUBRICANTS

(Pennsylvania Grade)

NEW YORK (f.o.s. in bbl.)—

Cylinder stocks:	
600 S.R. unfiltered	.18
630 S.R. unfiltered	.18¼
600 flash, S.R.	.18½
650 flash, S.R.	.20
Bright stock:	
Light, 25 pour point	.22

NEUTRAL OIL

200-3 color	.28½
150-3 color	.27

PARAFFIN WAX

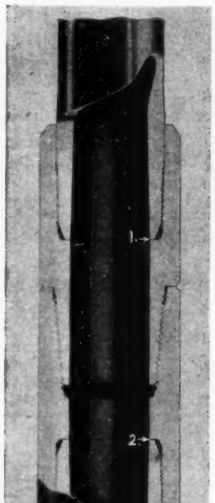
NEW YORK (prices per lb.)—

123-125 A.m.p.		.0560
125-127 A.m.p.		.0560
128-130 A.m.p.		.0585
133-135 A.m.p.		.0615
135-137 A.m.p.		.0640
Crude scale:		
124-126 w.s.	.02½	.02⅝
124-126 y.s.	.02½	.02⅝

EQUIPMENT PROGRESS...

Reed Announces New Super Shrink-Grip Tool Joint

The Reed Roller Bit Co., Houston, Tex., has announced its new Super Shrink-Grip tool joint. This new tool joint incorporates all of the advantages of the Reed regular Shrink-Grip tool joint, plus the added advantage of making replacements "at the rig" without the need of a buckling-on machine.



As shown in the illustration, the drill pipe lands on an inside tool-joint shoulder. After the worn tool joint has been cut off with an acetylene torch, the new Super Shrink-Grip tool joint is simply heated in a small portable heater and screwed onto the drill pipe by hand until it lands on this shoulder, which indicates proper makeup. No scratch or reference marks are needed. As the tool joint cools the threads, tool-joint recess and gaging shoulder shrink to a predetermined tightness which, due to shrinkage, is held within the elastic limit of the pipe steel. The pipe, therefore, is not deformed by unnecessarily high pressures and will be exactly to gage when the joint is removed, after long service, for the reapplication of additional tool joints.

The shrunk-on threads are landed on wide, flat crests and roots and assure a dependable connection between the pipe and tool joint. The inside tool-joint shoulder also effects an added seal which is an additional protection against leakage and failure and prevents further makeup. No hard-to-handle equipment is necessary in replacement operations and all material is easily carried to the location eliminating excessive transportation costs and expensive delays.

Gulf Coast Steel Barrel Plant Put in Operation

The Gulf Coast Steel Barrel Co., a subsidiary of Jones & Laughlin Steel Corp., of Pittsburgh, Pa., has just placed in operation its plant at Port Arthur, Tex., Roy E. Hurd, president, has announced. The plant will manufacture steel barrels for the petroleum industry, and will have a capacity of 300 bbl., or a carload, an hour. Sheet steel is to be barged down the Mississippi River and the Intercoastal Canal from Pittsburgh to the Gulf Coast steel plant, converted into steel barrels and shipped by rail to refineries in the Southwest. The plant will employ about 150 persons.

Appoint Cavins Co. Mid-Continent Distributor of O'Neill Swabs

The Frank E. O'Neill Oil Field Service Co., Long Beach, Calif., manufacturers of the recently perfected and highly successful O'Neill swabs, announces the appointment of the Cavins Co. of Long Beach as the Mid-Continent distributor for these products. According to G. W. Moore, California manager of the Cavins Co., arrangements have been completed in Cavins' 10 Mid-Continent distributing branches located at Odessa, Corpus Christi, Houston, and Kilgore, Tex.; Hoisington, Kans.; Griffin, Ind.; Lake Charles, La.; Lance Creek, Wyo., and Denver, Colo., to give speedy delivery and service on the O'Neill swabs, available in all tubing sizes from 1½ to 4 in. as well as some drill-pipe sizes. Casing sizes range from 4¾ o.d. to 9⅝ in. o.d.

The Cavins Co. is known in all principal oil fields throughout the world as the manufacturers and distributors of the Cavins automatic hydraulic suction bailer and fishing tool, Cavins rod type and cable-type sand pumps, Cavins perforation swabs, Cavins cement dump bottoms, and Cavins bridging plugs.

Lane-Wells Acquires Olympic Packers and Liner Hangers

According to an announcement made February 10 by Rodney S. Durkee, president, Lane-Wells Co. has purchased the patents, packer and liner-hanger stocks and good will of the Olympic Products Co. of Los Angeles and Houston, maker of Olympic packers and liner hangers. The newly acquired line of tools will be known as Lane-Wells "Olympic" packers and liner hangers and will be sold through all of Lane-Wells branch offices in the Gulf Coast, Mid-Continent, and California oil fields. Manufacturing will be done in the company's Los Angeles plant. Stocks of packers and parts will be carried in each of the division headquarters.

Lane-Wells Co. is one of the largest manufacturers and distributors of oil and gas-well packers. In addition to the new "Olympics," Lane-Wells' complete line of packers and liner hangers consists of the Lane-Wells Quinta-Seal packers and liner hangers, thin-wall packers, anchor-type formation packers, plain and lead packer liner hangers, as well as special packers of all types to meet every condition requiring the use of specialized tools.

BJ Center-Latch Elevator for External Upset Drill Pipe

Byron Jackson Co. now manufactures a light type center-latch elevator for handling shorter strings of external upset drill pipe used with portable rigs and

in exploratory work where the working load does not exceed 20 tons. The BJ Type LG elevator handles external upset 18° taper drill pipe without the use of lifting plugs. The body of the elevator is made in two halves with a strong hinge pin in the back and a stirrup-type latch hinged to one of the halves of the body, and so constructed as to distribute the shear. The other half of the body has a large lug which the latch engages. On the latch is mounted a safety latch which forms the handle for unlatching the elevator, and positively locks the elevator closed, safe from accidentally becoming unlatched due to a sudden jar.

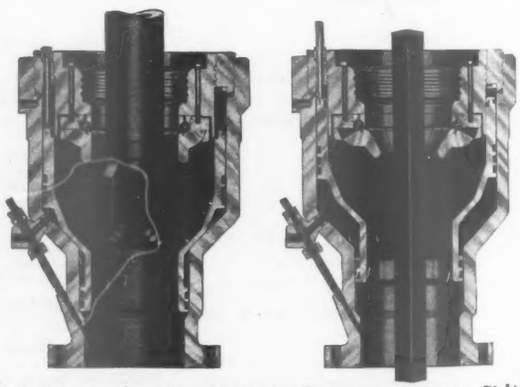
Large loop-type operating handles permit easy opening and closing of the elevator; a third handle is placed on the rear of the elevator to permit faster, easier handling of the elevator by the floor men. The elevator is lubricated through a standard grease gun fitting on the rear of the body. More complete information about the BJ Type LG center-latch elevator is available from Byron Jackson Co., Box 2017 Terminal Annex, Los Angeles, Calif.

HYDRIL ADDS TO TYPE "R" LINE OF BLOWOUT PREVENTERS

An addition to the line of Type "R" blowout preventers is offered by the Hydril Co., 714 West Olympic Boulevard, Los Angeles, Calif. The new blowout preventer, designated the No. 3 size, is designed for use as a primary blowout preventer and can be used with auxiliaries such as ram-type control equipment of all kinds as well as the larger models in the Type "R" line.

Packing units with bores of various sizes are supplied to give the pack-off range required by particular conditions. The packing unit with 10-in. bore will allow the passage of bits and tools used in 11¾-in. casing, and will seal off around drill-string members from 9⅞-in. o.d. to 3½-in. o.d. When the packing unit with 8¾-in. bore is used, bits and other tools that will run inside of 9⅝-in. casing will pass through the blowout preventers. This packing unit seals around drill-string members as small as 2⅞-in. o.d.

A large reserve of material is provided in the packing unit to withstand wear occasioned by the rotation of the kelly or drill pipe and by stripping tool joints, casing protectors and other large-diameter portions of the drill string under pressure. The blowout-preventer head is equipped with lugs for attaching a special kelly packer. This assembly packs off either the square or hexagonal kelly and permits prolonged drilling under pressure without imposing undue wear on the packing unit of the blowout preventer.



Left: Bit passes through packing unit without removal of parts. Right: Packing unit seals on any kelly or other member of drill string

AMONG EQUIPMENT MEN...

OIL WELL SUPPLY APPOINTS FOUR MEN TO KEY POSITIONS

Ernest W. Horst has been appointed manager of purchases and materials for Oil Well Supply Co. With headquarters at the company's general office in Dallas, Tex., Mr. Horst supervises the purchasing, materials, pricing and traffic departments. He joined "Oilwell" in 1919 at the manufacturing plant then operated in Pittsburgh, Pa. Subsequently he was associated with the purchasing and accounting departments and spent 5 years as field auditor. In 1934 he was made assistant manager of pricing, and for the past 2 years has been assistant to vice president, Midwest division.

K. B. Winstead, sales manager of Oil Well Supply Co.'s Midwest division for the past 2 years, has been appointed assistant to vice president, Midwest division, with headquarters at Dallas. Mr. Winstead's connection with "Oilwell" dates from 1921 when he became associated with the company's office at Fort Worth, Tex. Subsequently he served as store manager at Breckenridge, manager of the North Texas district, and sales manager of the Ark-La-Tex district.

Lloyd E. Tracy, manager of subsurface sales for Oil Well Supply Co.'s Midwest division since 1939, has been appointed sales manager of that division and will continue to make his headquarters at Dallas. Prior to joining "Oilwell" as sucker-rod sales engineer in 1935, Mr. Tracy spent 8 years in metallurgical work with National Tube Co.

R. T. Shoemaker, subsurface sales engineer in the East Texas, North Louisiana and Arkansas district, succeeds Lloyd Tracy as manager of subsurface sales for "Oilwell's" Midwest division with headquarters at Dallas. Mr. Shoemaker joined "Oilwell" in 1936 as sucker-rod sales engineer after 8 years as a chemist and metallurgist for National Tube Co. His practical experience followed 5 years of specialized university training in chemistry and metallurgy. This provided a sound background for subsurface engineering work, where an understanding of corrosion problems and the use of alloys and heat-treated steels is of paramount importance.

ERNEST W. HORST *K. B. WINSTEAD* *R. T. SHOEMAKER* *LLOYD E. TRACY*

Hicks and Hughes Promotions Announced by Hydril Co.

Allan S. Hicks, of the Hydril Co., has taken over the job of California sales manager in addition to his duties as manager of export sales. He will make his headquarters at the Lomita factory and will handle both California and export sales from that place.

A. S. HICKS *J. B. HUGHES*

Mr. Hicks has a thorough knowledge of Hydril products and their relation to operating conditions because of his many years of service with the company as field engineer in California, Texas, and Oklahoma. Two years ago he made a trip of many months' duration in the Near East, Burma and the Netherland East Indies, and took an extensive trip through South American fields last year. He has been with the Hydril Co. for more than 10 years in all.

James B. Hughes of the Hydril Co. has assumed his new duties as district engineer attached to the Texas division of the company. Mr. Hughes was formerly in charge of field service for the Hydril Co. at Odessa, Tex., where he spent about 2 years. From Odessa he was transferred to California where he worked as field engineer in the Bakersfield area. He will make his headquarters at Houston but will expand his activities throughout Texas and Louisiana.

BUSINESS NOTES

As of March 1, 1941, the Tulsa branch of the Wico Electric Co. will be closed and stock will be transferred to Wico distributors handling the area formerly served by the branch. The need for the branch has passed with the establishment of distributors and service stations at every point to give adequate coverage. As far as Wico factory representation is concerned, R. B. Day will be located at 222 South Topeka Avenue, Wichita, Kans., and H. Lolley will have offices at 2105 Bryan Street, Dallas, Tex. Mr. Day has been branch manager at Tulsa and Mr. Lolley, sales engineer.

Appointment of F. W. Morris as sales manager for the Dayton Coupling division, effective February 15, 1941, has been announced by the National Supply Co. Mr. Morris has been associated with the Spang-Chalfant tubular sales division since July 15, 1925, and for the past 3 years has been located in Philadelphia, Pa., and will now headquarter at Pittsburgh, Pa. The plant for Dayton Couplings is at Carnegie, Pa.

International Cementers Establishes District Office in West Texas

With Paul M. Lewis as district manager, International Cementers, Inc., announces the establishment of district headquarters at Brownfield, Tex. New equipment specially constructed to meet the requirements of oil-well cementing in the West Texas area is available. Exclusive features incorporated in International Cementers units provide for automatic control of the weight of cement slurry, the rapid placement of cement, and for the successful accomplishment of high-pressure jobs.

"Ike" Christian Appointed Representative for McEvoy

The McEvoy Co., Houston, Tex., has announced the appointment of C. C. (Ike) Christian as sales representative in the Wharton and Bay City districts.

Mr. Christian began work for the Humble Oil & Refining Co. during the Corsicana boom in 1923 and was connected with that company for 7 years. In 1930 he was employed by the Halliburton Oil Well Cementing Co. in its testing-tool division and covered East Texas and other fields in that capacity. His present headquarters are at McEvoy's Houston office.

LANE-WELLS EXECUTIVES AND MANAGERS AT SALES CONFERENCE

Lane-Wells Co. officers attending the company's 1941 sales convention in Los Angeles, Calif., held January 13-17, and attended by all division managers and sales managers: Walter T. Wells, chairman of the board; G. F. Turchek, mechanical research engineer; D. S. Jeppson, controller; J. W. McPhee, California division manager; Rodney S. Durkee, president; M. E. Montrose, vice president and general sales manager; Charles H. Barnes, production engineer; E. R. Smith, sales engineer; D. M. Anderson, California division sales manager; M. L. Dorn, vice president and chief engineer; J. Murray Walker, Canadian division manager; J. E. Huff, Jr., acting Gulf Coast sales manager; R. B. McCullar, Mid-Continent division manager; Charles T. Casebeer, Mid-Continent division sales manager; M. T. Higgs, Gulf Coast division manager.

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Equipment Wanted

WANTED—One direct connected, angle type, gas engine driven, air compressor unit, 100 to 250 H.P., maximum speed 350 R.P.M., 125# air pressure. Hercules Gasoline Company, 530 Giddens-Lane Building, Shreveport, La.

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For Sale—Equipment

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FOR SALE
1 Rotary Drilling Rig D. C. Electric Powered By 2—300 HP Waukesha Gas Engines; complete LESS Drill Pipe.
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1 Cable Tool Drilling Unit Lee C. Moore Type "B" Front, Unitized Bull Wheels with ⅞" x 4500' Drilling Line, O.C.S. Greyhound Chain driven and Sand Reel complete with ⅝" x 5500' Sand Line, Boiler, Engine and Tools Complete. Has drilled in two wells after Rotary. Practically new.
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THE OIL AND GAS JOURNAL
Tulsa, Oklahoma

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FOR SALE

One gasoline drilling rig with two 85 H.P. Waukesha motors and unitized draw works complete.

300 sets 3″ A.P.I. tool joints.

10,000 Ft. 7″ O.D. 26# seamless casing, once run.

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In addition to the above we have 20,000 Ft. of 6″ screw line pipe in Oklahoma; also drilling rig capable of drilling to 6500 feet, complete stock of line pipe, casing, drilling and pumping equipment.

Wire, Write or Phone for Prices.

Louisiana Iron & Supply Co.
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FOR SALE at Bartlesville: 1 set shear poles. Complete for National Drilling Machine. I. T. I. O., Bartlesville, Okla.

2300′—2½″ upset range 1 tubing, 15 cents per foot. Melton Supply Co., Seminole, Okla.

FOR SALE: At Bartlesville 1—2A National Portable Drilling Machine Less Tools. I. T. I. O. Co., Bartlesville, Okla.

FOR SALE: One 50 HP Bessemer type GD single cylinder gas engine. $300.00. I.T.I.O., Bartlesville, Okla.

INTERNATIONAL Supply Company geared pumping unit for 3000′-4000′ wells, complete with power, $1290.00. Melton Supply Co., Seminole, Okla.

FOR SALE AT SEMINOLE AND OKLAHOMA CITY: 10—Low pressure "Tulsa" open type gas coolers. $50.00 each. I.T.I.O., Bartlesville, Okla.

NOTICE — CABLE-TOOL CONTRACTORS. Save money; good used wire lines. All sizes up to 5,000 ft. long. See us before you buy. General Tool & Supply Co., P.O. Box 4387, Oklahoma City, Oklahoma.

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Terms to suit.

CINCINNATI MACHINERY & SUPPLY CO.
26 West 2nd St., Cincinnati, Ohio

FOR SALE—At Oklahoma City—11 6″ and 8″ Byron-Jackson built-in motor pump heads for use in operating deep-well turbine pumps. I. T. I. O. Company, Bartlesville, Oklahoma.

FOR SALE AT OKLAHOMA CITY—2—6′ diameter 38′ high 16 tray Southwestern Eng. absorbers. Ser. #6389-90. $1,000.00 each. I.T.I.O. Co., Bartlesville, Okla.

FOR SALE: One large, used Ideco pumping unit and engine complete. Call 2984 or write

W. C. CARPENTER
510 W. 10th St., Hutchinson, Kans.

FOR SALE: 6—40 gallon foam—outdoor type mounted fire extinguishers. Also 34—5 gallon foam type. I.T.I.O., Bartlesville, Okla.

STEAM SLUSH PUMPS: 5—18″ Luceys, 2—18″ Johnson "G," 1—14″ Ideal. Lucey Products Corp., Tulsa, Okla.

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FOR SALE: At Oklahoma City 3″—4″—6″—7″—8″—10″—16″, 20″ victaulic—couplings less rubbers—cheap—I.T.I.O., Bartlesville, Okla.

BOILERS: 3—85 HP, 225# WP Acme. Ideal for Lease or Plant. Lucey Products Corp., Tulsa, Okla.

FOR SALE: 5—Steam Rotary Rigs complete less drill pipe. 15—250#-300# Pressure Boilers, 5—12″ x 12″ Twin Cylinder Steam Engines, 5—Drawworks, unitized, with automatic cathead, 5—Rotaries, 4—25½ Emsco, 1—26″ Ideal, 10—10 x 4½ x 10 Worthington Boiler Feed Pumps on steel skids. 5—Generators, 5—Traveling Blocks, 5—Crown Blocks, 5—Swivels, 5—38′ Kelleys, Tongs, Elevators, Weldless Links, and Misc. Material—Tool Houses, Tool Boxes, Engine Substructures and Etc. Above used material is complete and intact. Will sell all or any part. UNITED SUPPLY & MFG. CO.—Tulsa, Okla.

FOR SALE: Oklahoma City. 150—8′ Dresser—Dayton Long Sleeve Couplings less Rubbers. I. T. I. O., Bartlesville, Okla.

FOR SALE AT OKLAHOMA CITY: 1—12 x 12 gumbo buster twin steam engine. $250.00. I.T.I.O., Bartlesville, Okla.

LARGE QUANTITY new engineers end and socket wrenches. Substantial discount. Lucey Products Corporation, Tulsa, Okla.

FOR SALE: NEW Gardner-Denver vertical two-stage air compressor, water cooled, complete with circulating pump, V-belts, Hercules power unit with natural gas-gasoline carburetor, all mounted on skids, 600-1000 pounds pressure. Sacrifice for cash. V. Lewis, 1012 Jones Building, Corpus Christi, Texas.

For Sale—Equipment

FOR SALE: 4—OCS Roller Bearing Chain Driven Sand Reels. I. T. I. O., Bartlesville, Okla.

FOR SALE: 14″ x 18″ twin Tico gas engine, with 125 k.w. generator, 2,300 vt., belt driven. P.O. Box 604, Oil City, Pa.

WANT TO BUY

8″, 10″ and 12″ New or second hand couplings.

HAVE FOR SALE

45 Lengths 13⅜″ O.D. Non-tested Pipe which is New, in random lengths, plain ends, weighing 45# to the foot.

EASTERN PIPE SUPPLY COMPANY
1424 N. NINTH STREET
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New York Markets

(Continued from Page 97)

in the Gulf-to-north-of-Hatteras route but their departure from the market is not expected to affect the coastwise rates, due to the decline in volume of shipments.

The recent flurry in lubricating oils which saw several price advances, particularly in steam-refined oils, apparently has abated. Some observers are inclined to attribute the recent advances more to prospects than to actual demand. Prospects of a heavy demand this year are bright and last year's record domestic consumption of 24,657,000 bbl. of lubricants is expected to be exceeded.

This table shows that while kerosene lost the largest part of its export market proportionately, the greatest volume loss among liquid petroleum products was suffered by lubricating oils.

This report also reveals that a large part of the exports of motor fuel to Great Britain consists of anti-knock compounds, isooctane, isopentane, neohexane and semifinished products such as octylenes, alkylates, hydrolized octylenes, etc. Of our total exports of 298,164 bbl. of these products in January, 188,191 bbl. went to the United Kingdom, 45 per cent of the total.

Gulf Coast Markets

(Continued from Page 97)

though there is not a great number of suppliers of this material. Kerosene is quoted at 3¼ cents but it is considered likely this figure might be shaded in some instances with a firm order.

No change is shown in the residual-fuel picture. Material quoted as low as 72½ cents has been picked up. Seventy-five cents appears the low price, and general opinion is that the market has seen bottom.

The soft undertone which has been evident in coastal lubricating oils for some time seemed greater the past week. The market now is rather shaky. Officially, there have been no revisions in general price schedules, but small-lot dealers report losing business at quotations below regular schedules.

Tank-Wagon Changes

(Continued from Page 98)

cent per gallon at Washington, D. C., effective February 28. The dealer tank-wagon price of gasoline was reduced 1.45 cents per gallon March 3 at Wheeling, W. Va.

Socony-Vacuum Oil Co., Inc., advanced the consumer tank-car price of regular gasoline 0.3 cent per gallon February 24 at Buffalo, Rochester, and Syracuse, N. Y.

Standard Oil Co. of Kentucky reduced the dealer and consumer tank-wagon price of gasoline 1 cent per gallon at Macon, Ga., effective February 25. On the same day the company increased gasoline to both classes of trade 1.5 cents per gallon at Mobile, Ala.

Socony-Vacuum reduced the consumer tank-car price of gasoline at Albany, N. Y., 0.9 cent per gallon on February 21. The company increased the consumer tank-car and dealer tank-wagon prices 0.3 cent in New York City March 6. Dealer tank-wagon price was advanced 1.3 cents March 4 at Syracuse, N. Y., and the same class of delivery was reduced 0.2 cent per gallon at Providence, R. I., February 26.

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